(IDG)

TEST RUN
Our Field Report takes a hard look at
Windows 2000 Datacenter. Page 64

MEET THE NEW BOSS
Computerworld delves into the IT ranks to
hire a former CIO as our CEO. Page 6

SPENDING OUTLOOK: 2001
A *Computerworld* survey finds that 50% of IT organizations
expect to have more to spend next year. Page 48

COMPUTERWORLD

THE NEWSPAPER FOR IT LEADERS • WWW.COMPUTERWORLD.COM DECEMBER 18, 2000 • VOL. 34 • NO. 51 • $5 COPY

THE NEW YORK STOCK EXCHANGE
is revamping its technology to meet
competitor threats, says Roger
Burkhardt, chief of trading systems
development.

TRADING PLACES

It's a classic case of cutting out the middlemen: The new wave of
"electronic communications networks" replaced the market makers on
stock-trading floors with subsecond online transactions — and took a chunk
of business from the traditional stock exchanges. Now the
New York Stock Exchange and Nasdaq are fighting back
with overhauled technology and new business models
that look a lot like ECNs. This high-stakes battle is far
from over.

WALL STREET

Story is on page 20.

BUSH EYES OVERHAUL OF E-SECURITY

*President-elect to appoint IT czar, may
reorganize infrastructure protection center*

BY DAN VERTON

With George W. Bush striding
toward the White House, na-
tional security experts
are preparing for what
could be a major
change in the way the
government and the
private sector organize to de-
fend against cyberattacks.

Clinton administration offi-
cials and other national cyber-
security experts say Bush
plans to appoint an IT "czar"
by next summer to better man-
age the government's IT in-
vestments. That move, say ex-
perts, will likely involve reor-
ganizing the federal critical in-
frastructure protection effort

NATIONAL SECURITY

and possibly changing the role
of the FBI's National Infra-
structure Protection Center.

Changes to NIPC
could include asking
Congress for new leg-
islation to make it eas-
ier for the national se-
curity community to get access
to investigative information,
making NIPC subordinate to a
federal IT czar or security offi-
cer, or starting from scratch
with a different type of organi-
zation, according to sources.

The primary driver behind
calls for such changes is the
lack of a top wire that would
tap off intelligence and national

E-Security, page 85

SUN'S MEMORY PROBLEMS PERSIST

*Company, analysts say
progress is being made*

BY JAIKUMAR VIJAYAN

Some users of Sun Microsys-
tems Inc.'s UltraSPARC serv-
ers continue to have problems
with a defective memory com-
ponent several months after a
senior Sun executive said the
company was close to declar-

ing "complete victory" over
the nagging issue.

But Sun and analysts last
week insisted that the compa-
ny has made significant prog-
ress in addressing the problem.

The defect is in an external
memory cache on Sun's Ultra-
SPARC II microprocessors.
Under certain conditions, the
problem has been triggering
system failures and frequent

reboots at dozens of customer
locations worldwide for more
than 18 months.

Sun has acknowledged that
it has been grappling with the
defect for some time. But in an
interview with *Computerworld*
in August, Sun Executive Vice
President John Shoemaker said
the company was close to fix-

Sun Problems, page 85

EMPLOYERS OK WITH E-SURFING

*Firms tolerating some
amount of personal use*

BY DAN VERTON

We've all done it. You sit down
to lunch at your desk, click on
the Internet icon and surf over
to your favorite retail site,
where you place an order for
the Pokemon figures your son
wants for Christmas. No harm
done, right?

Believe it or not, that's what
most companies said in a re-
cent survey. Despite the rash
of horror stories about how
much personal Internet use is
costing companies in lost pro-
ductivity, those surveyed and

Online at Work

*Internet use policies often
include the following:*

**Guidelines for when
and why** company Inter-
net and e-mail can be used
for personal reasons

**Restrictions and legal
ramifications** pertaining
to visiting hate-group and
pornographic Web sites,
for example, or sending
harassing e-mails

others interviewed by *Comput-
erworld* said they just aren't
very concerned about it.

Instead, they're publishing
flexible policies on how com-
puter assets can and should be
used during work hours. And

E-Surfing, page 16

Still Flying High

Sun continues to lead the
high-end Unix market despite
server memory problems:

	REVENUE	UNITS
Sun	$290M	723
HP	$747M	158
IBM	$190M	80

SOURCE: DC VENDOR TRACKER REPORT FOR
THE THIRD QUARTER

...o cryptographic domains deflect firewall breach by enabling pu

denial of service: ICMP flood, SYN

VPN hijacking.

blic key algorythm

flood, smurf
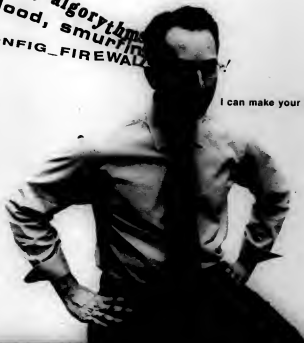
CONFIG_FIREWALL

I can make your web site safe.

GREAT EXPECTATIONS

IT managers are willing to hire more entry-level talent these days. But your views on what these newbies have a right to ask for and their views on what they can demand may be far from the same. Last spring, we spoke with several soon-to-be IT grads to ask them about their first-job expectations. Then we followed up with them in the fall to find out how their perceptions matched their new reality. **Page 54**

AN ANSWER TO FLORIDA FALLOUT

Don't put all of the blame for the Florida election fiasco on technology, Bruce Schneier writes in an op-ed column. But consider this: an IT-based voting system that minimizes the number of vote tabulation steps – and uses paper ballots for recounts. **Page 36**

COMPUTERWORLD THIS WEEK

DECEMBER 18, 2000

Microsoft Warns of Lower Revenue, Profit

Microsoft Corp. became the latest technology vendor to warn of lower-than-expected financial results, reporting that revenue and profits for its second fiscal quarter, which ends this month, will likely be as much as 6% below expectations. Revenue for the year as a whole is now expected to total about $25.2 billion - 5% less than previous projections. Microsoft officials cited a global economic slowdown that hurt PC sales, with consumer products affected more severely than software for corporate users.

Oracle Revenue Meets Expectations

Oracle Corp. just barely surpassed Wall Street's predictions for its second fiscal quarter, which ended Nov. 30. The company reported revenue of $2.7 billion and net income of $623 million, a figure that was up 62% from $384 million from a year ago. Oracle officials credited strong growth in sales of the company's business applications. Applications revenue grew 66% to $279 million, while sales of Oracle's flagship database software increased just 19%.

Hershey Hires Outsider for CIO Job

Hershey Foods Corp. has named a new CIO, bringing in former Computer Sciences Corp. executive George Davis to manage the company's IT integration group and its data center, e-commerce and electronic data interchange operations.

Microsoft Extends NT 4.0 Deadline

IT professionals trying to take the Microsoft Windows NT 4.0 certification exam prior to the Dec. 31 deadline have been given a slight reprieve. Microsoft extended the availability of the exams until Feb. 28 to accommodate candidates who are having difficulty scheduling tests. The company is also creating a new certification exam to test the skills needed to maintain a Windows NT Server 4.0 network.

GM Inks Big Distribution Outsourcing Pact

Cost cuts to come from logistics operations

BY LEE COPELAND

The world's largest automobile maker is once again filling the role of start-up incubator, as it bets that a strategic-minded technology services company can help turn the tail end of its business.

General Motors Corp. set up motion its fifth joint venture of the year last week, striking what could potentially become one of the largest outsourcing deals ever as it teams with CNF Inc. to manage the distribution of materials to its auto maker plants and vehicles to its dealerships.

It's not the first time an automaker has turned to a third party to help manage its logistics operations. Dearborn, Mich.-based Ford Motor Co. last February tapped Atlanta-based United Parcel Service of America Inc. to help build an Internet-based system designed to streamline the amount of time it takes to deliver vehicles from the factory floor to dealerships.

Placing its distribution activities in the hands of a start-up at a time when a number of dot-coms have gone belly-up is a bold move, but the payoff could outweigh the risks, analysts said

The Vector Plan

GM's latest effort is called Vector SCM. CNF, a Palo Alto, Calif.-based transportation giant, holds the majority stake in the new firm, but Detroit-based GM retains voting control.

GM wants to gradually outsource more than $9 billion in annual logistics functions to Vector, which will implement a single technology platform for managing the process. Vector promises to cut 20% of the cost of handling about 200 million pounds of material each day.

"There are always bad lumps when trying to create ground-breaking savings," said Edward Wolfe, a financial analyst at Bear Stearns & Co. in New York. "GM has very strict benchmarks, so short-term greed and cost reductions. These are lots of outs for both companies in the contract,

so it isn't proceeding in the right direction.

Wolfe's stance is that the automotive market will prove to be a tough one for the two teams, from which it will have to extract savings. Driven in large part by specialty logistics companies like Vector that try and use management systems to speed inventory efficiency.

GM has several technology-driven start-ups in the works, such as the as yet unnamed online parts portal it set up with Ford DaimlerChrysler Co. in Germany, and Bell & Howell Co. in Skokie, Ill., cash-in this month (News, Dec. 11).

The automaker also announced a consumer car-brokerage service in August, which is building with dealers to sell all makes and models of used cars online.

GM launched these and other start-ups to cut costs out of the processes of acquiring

goods, shipping parts to dealers and locating vehicles from its assembly operations.

"The technology used was the primary driver," said Greg Runyan, an analyst at The Yankee Group in Boston. "The idea of GM working with multiple different third-party logistics providers, each with its own EDI links and IT systems, is tough to manage. The goal here is to create a collaborative logistics hub."

Analysts said making Vector successful would require more management acumen than had assets. The Conyston online procurement marketplace, on the other hand, has cost its backers more than $200 million thus far.

"It's not a lot of new costs; it's more of a reallocation of costs and personnel," Wolfe explained.

About 800 people work in GM's global logistics department. The automaker doesn't anticipate any layoffs, but it does expect the group to shrink due to attrition. GM has fewer than 100 employees

Branching Out

GM has several technology-driven start-ups in the works, including the following:

■ **Vector SCM,** a logistics company launched last week by GM and CNF.

■ **An as-yet-unnamed parts exchange** launched by GM, Ford and DaimlerChrysler earlier this month.

■ **Covisint,** a massive online procurement exchange, in which GM, Ford and DaimlerChrysler have invested $200 million.

■ **An online consumer car-purchasing site** that GM is building with its dealers. Tentatively called BuyPower.com, it will sell all makes of vehicles.

■ **TradeXchange,** launched last December with Commerce One Inc. GM is in the process of shutting it down by year's end.

Former CIO Alan Guibord Named Computerworld CEO

BY JULIA KING

For the first time in 33 years, Computerworld has a new leader, one who understands the unique perspective of an IT vendor's customer.

Computerworld Inc.'s parent company, Boston-based International Data Group (IDG), has appointed Alan Guibord, a former CIO at a Fortune 500 firm, to lead its flagship publication, charged with running the day-to-day operations of the publishing, events and other businesses.

Guibord joins Framingham, Mass.-based Computerworld from Boston-based Liberty Mutual Group, where he was vice president of corporate systems. He's known in the technology industry for coining the term

ALAN GUIBORD

"Man is a visionary, with acute knowledge and under-

standing of the Computerworld brand," said IDG Chairman Patrick McGovern. "His unique perspective on the market and [expertise] as a former CIO clearly make him the ideal chief executive officer for the new Computerworld."

"I am the customer who Computerworld has focused on for more than 20 years," Guibord said. "The biggest thing I bring to the publication is my eye and mind of the customer. I don't come from a publishing background but from a technology background and a background as a longtime reader."

At Iron James, Guibord had global responsibility for all IT, telecommunications and future manufacturing. He led the initial development of an e-commerce strategy for the

company's retail and commercial businesses. Before joining Iron James in 1996, he spent two years as vice president of IT at R.R. Donnelley & Sons in Chicago, where he helped re-organize the company and position it for global expansion.

As CEO, Guibord said, he plans to significantly expand Computerworld's online operations, which he anticipates will make up the lion's share of the company's revenue within the next five years. He also plans to launch a series of Computerworld events and supplemental publications.

Guibord replaces Gary J. Beach, who is moving to the publisher's magazine. He'll be launched early next year that will focus on technology's impact on the bottom line.

"We are really pleased to be working with a CEO who has essentially been our target reader and who is bringing so much creativity and so many new ideas from that IT leadership background," said Mary-Ann Johnson, Computerworld's editor in chief.

She succeeds interim CEO Joe Levy, who is president and CFO of IDG magazine ▶

AT DEADLINE

Microsoft Warns of Lower Revenue, Profit

Microsoft Corp. became the latest technology vendor to warn of lower-than-expected financial results, reporting that revenue and profits for its second fiscal quarter, which ends this month, will likely be as much as 6% below expectations. Revenue for the year as a whole is now expected to total about $25.2 billion - 5% less than previous projections. Microsoft officials cited a global economic slowdown that has hurt PC sales, with consumer products affected more severely than software for corporate users.

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GM Inks Big Distribution Outsourcing Pact

Cost cuts to come from logistics operations

BY LEE COPELAND

The world's biggest automaker is once again filling the role of start-up incubator, as it bets that a smaller, nimbler, technology-savvy company can help trim the fat out of its business.

General Motors Corp. set in motion its fifth joint venture of the year last week, striking what could potentially become one of the largest outsourcing deals ever as it teams with CNF Inc. to manage the distribution of materials to its automotive plants and vehicles to its dealerships.

It's not the first time an automaker has turned to a third party to help manage its logistics activities. Dearborn, Mich.-based Ford Motor Co. last February tapped Atlanta-based United Parcel Service of America Inc. to help build an Internet-based system designed to streamline the amount of time it takes to deliver vehicles from the factory floor to dealerships.

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GM's latest effort is called Vector SCM, CNF's Palo Alto, Calif.-based transportation giant, holds the majority stake in the new firm, but Detroit-based GM retains voting control.

GM wants to gradually outsource more than $3 billion in annual logistics functions to Vector, which will implement a single technology platform for managing the process. Vector promises to cut 10% of the cost of handling about 180 million pounds of material each day.

"There are always challenges when trying to create groundbreaking savings," said Edward Wade, a financial analyst at Bear, Stearns & Co. in New York. "GM has very strict benchmarks to show [pre-gress] and cost reductions. There are lots of outs for both companies in the contract, if

it's not proceeding in the right direction."

Wolfe estimates that the outsourced logistics market will grow 16% over the next five years, from $120 billion last year, driven in large part by specialty logistics companies like Vector that use information management systems to speed inventory efficiency.

GM has several technology-driven start-ups in the works, such as the as-yet-unnamed online parts portal it set up with Ford, DaimlerChrysler AG in Germany and Bell & Howell Co. in Skokie, Ill., earlier this month [News, Dec. 11].

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"It's not a lot of new costs. It's more of a reallocation of costs and personnel," Wolfe explained.

About 800 people work in GM's global logistics department. The automaker doesn't anticipate any layoffs, but it does expect the group to shrink due to attrition. CNF has fewer than 100 employees

dedicated to the Novi, Mich.-based Vector facility; it plans to expand the organization to more than 200 staffers by the next quarter.

Former CIO Alan Guibord Named Computerworld CEO

BY JULIA KING

For the first time in its 34-year history, Computerworld has gone outside of publishing and into its readership to hire a president and CFO.

Computerworld Inc.'s parent company, Boston-based International Data Group (IDG), has appointed Alan Guibord, a former CIO at a Fortune 500 firm, to lead its flagship publication, effective immediately.

Guibord joins Framingham, Mass.-based Computerworld from Fort James Corp., a $7 billion international consumer products company in Norwalk, Conn. He has also served in CIO positions at R.R. Donnelley & Sons Publishing Corp., Pic-tureTel Corp. and TimePlex.

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ALAN GUIBORD

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NEWS

Hospital Confirms Hacker Stole 5,000 Patient Files

Supposed 'ethical' hacker infiltrated system last summer

BY MARC L. SONGINI

A MAJOR university hospital in Seattle last week confirmed that a hacker penetrated its computer network this past summer and made off with files containing information on approximately 5,000 patients.

Officials at the University of Washington Medical Center said the hacker, who calls himself "Kane," stole users' passwords and copied thousands of files while he had access to the hospital's systems. The hacker slipped into the network through an exposed Linux server in the hospital's pathology department, said medical center CIO Tom Martin.

The medical center suspected at the time that its network had been infiltrated and took steps to cut off the hacker's access, Martin said. But, he added, the hospital was unaware that the files had been pilfered until Kane provided information about the intrusion to SecurityFocus.com, a San Mateo, California-based Web site that focuses on security issues.

Outlaw or Whistle-blower?

Kane, who told SecurityFocus that he lives in the Netherlands, shared some of the copied files with the security Web site to verify that he had accessed the sensitive data. SecurityFocus.com staffer Kevin Poulsen said Kane views himself as an ethical hacker and indicated that he simply wanted to expose the vulnerability of the hospital's network. "He portrays himself as more of a whistle-blower than as an outlaw," Poulsen said.

But after being informed of the file-copying, officials at the medical center reported the hacking incident to the FBI for investigation, Martin said. The hospital also beefed up its firewalls in an effort to better protect its network, and it began notifying all of the patients whose personal information was in the files that Kane copied.

In a statement, the hospital said the copied information wasn't directly related to the delivery of care to its patients. Rather, the information was stored in administrative databases and was used for patient tracking and following up on research studies.

"There is no evidence that anyone has breached our main electronic medical records system," said the hospital in a statement. "We assure patients and the public that this system remains fully protected by the highest levels of security possible."

Martin said Kane used sniffer software to steal the electronic identifications of a number of hospital employees from the exposed server and then used those credentials to access files related to patients in the medical center's cardiology and rehabilitation departments.

Martin said the hospital will be compliant with the Health Insurance Portability and Accountability Act (HIPAA), a set of privacy and security guidelines that the federal government is close to finalizing.

Wes Rishel, an analyst at Gartner Group Inc. in Stamford, Conn., described Kane's intrusion as "a classic penetration of a secondary system" that was running a personal application with collected data, rather than an attack on the hospital's main database server.

"Academic medical centers are prone to this, as part of the spirit of academic freedom that creates pressure for open access," Rishel said. The only major impact from the hacking incident might be to get policy-makers in Washington to push the HIPAA through as quickly as possible, he added. ▶

Attack points to need for standards for patient records

BY MARC L. SONGINI
AND JULEKHA DASH

THE RECENT hacking of 5,000 administrative patient files from one of the country's top hospitals underscores the lack of firm, clear, universal standards to ensure the security of online medical records. But although officials are crafting regulations governing electronic patient records for the health care industry, some analysts and industry players are skeptical about how effective these specifications will be.

In an attempt to remedy the situation, the U.S. government is finalizing and releasing the security and privacy portions of the Health Insurance Portability and Accountability Act (HIPAA), which will define interface and security standards and policies. Unless it is derailed by the new administration, the HIPAA privacy regulations will be enforced by both the regulatory commissions that accredit hospitals and the federal agencies that receive complaints.

Bumpy Road Ahead

But the industry has a long way to go.

"The privacy provisions are a quagmire," said Peter Tippett, chief technology officer at TruSecure Corp., an Internet security consultancy in Reston, Va. "A lot of it is onerous and expensive, and a lot of it is hard to interpret."

One of the problems is that the HIPAA is supposed to offer specifications to cover all privacy implementations, from one-doctor offices to giant health care organizations. It's too strict in many respects and too loose in others to offer adequate regulations across the board, Tippett said.

Nevertheless, some health organizations are already prepared for the HIPAA. One such organization is CareGroup Healthcare System, a Boston-based health provider network that includes Beth Israel Deaconess Medical Center.

For security, "128-bit Secure Sockets Layer [Web encryption] is fine, along with auditing, strong authentication and role-based access control," said CareGroup CIO John Halamka. His firm has two full-time employees who monitor the security and confidentiality of patients' online medical records. CareGroup also lets patients access their medical records through secure e-mail messages.

Lessons to Learn

However, there are a whole range of institutions that must be educated on any guidelines to be implemented, including third-party companies that offer electronic patient-record hosting or storage.

For instance, MOMR Inc. in Darien, Ill., offers patients access to their own records via its secured Web site. It has yet to sign on any institutional customers, but it claims that it will be compliant with the HIPAA.

But with start-ups, patients face the risk that companies that store their records online will go out of business, according to Zoe Hudson, a senior policy analyst at the Health Privacy Project at Georgetown University in Washington. A bankrupt company could sell its data to a company with a different privacy policy, Hudson said.

However, one security professional who stores his private health data online indicated that the security problem is really more a perception than a reality.

Bill Schneider, director of business development at Presidio Inc., a historic authentication company in St. Louis, uses MOMR to store his own health data and is confident that the company has adequate security. MOMR requires users to sign in with a password, and it transmits data with 128-bit encryption.

On the other hand, there are companies like PointShare Corp., a Bellevue, Wash.-based firm that handles networking services for medical providers, including the transmission of patient data, but only over secure private lines.

"We are not comfortable using the public Internet, although there has been a lot of good work with [virtual private network] and public-key infrastructure technology," said Rick Rubin, a vice president at PointShare.

Despite the obstacles, Schneider said he believes that online medical records will eventually gain more general acceptance.

"The biggest resistance is fear," he said. "Once fear is behind us, it can really take off." ▶

Met Life Taps AT&T To Manage Networks

Seven-year, $470M deal seen as part of trend toward outsourcing of 'headaches'

BY JAMES COPE

A mid return to turn its wide-area network into a sales channel to speed its evolution from a life insurance company to a full-service financial services firm. Metropolitan Life Insurance Co. last week said it signed a $470 million, seven-year deal with AT&T Corp. to manage Met Life's networking infrastructure.

Under the outsourcing deal, AT&T's professional services unit will manage New York-based Met Life's 5,000-plus routers, along with its private branch exchange systems, LAN hubs and other networking devices, company officials said. AT&T will also provide connectivity among all of Met Life's offices and help the insurer develop communications standards for its business units.

Don't Waste Time

Robert Benmosche, Met Life's chairman and CEO, said in an interview with Computerworld that it's best to off-load network management and WAN connections to a company that's in the networking business.

"You really have to ask the question: Do you want to [keep network management] in your own or leverage an organization that does it for a living?" Benmosche said. "What we shouldn't do is spend time finding out where the state of the art is [in network management]."

Jeff Moore, an analyst at Current Analysis Inc. in Sterling, Va., said the deal makes a lot of sense for Met Life. "The company has 700-plus locations, and they're interested in selling financial services, not IT," Moore said.

Hank Hamilton, vice president of technology at Met Life, said the company sees the agreement more as a business alliance than an outsourcing pact. "The deal has been cooking over the past 18 months," Hamilton said. "We were waiting to see how AT&T was going to reorganize" (News, Oct. 30).

Met Life will turn over network management to AT&T Feb. 1, Benmosche said. At that time, approximately 60 Met Life IT employees will be transferred to AT&T's payroll.

The transfer will benefit all involved, including the employees who move to AT&T, said Benmosche. Those employees will be working in a progressive environment with the latest technologies, he said, and their knowledge of Met Life will help smooth the transition of network management to AT&T.

"One of the reasons we selected AT&T is because there is a lot of synergy around our

BENMOSCHE: Leave net management to the professionals.

strategies on how to support the consumer," Hamilton said.

"We have 2,000 players in our sales force who are going into homes on a daily basis. We don't want these people hiding behind computers in the office."

Met Life sales people must have network access from wherever they are, as do retail and institutional customers, he said.

Hamilton said the Met Life network will need to support new services that the company plans to offer. Next year, for example, Met Life plans to open an Internet bank and offer more services to corporate customers via Web portals, he said.

As part of the agreement, AT&T will pay close attention to making sure users are taken care of "where [network] access begins," Benmosche said. "For us, that's usually going to be from the [customer's] home, but it could also be from cars and from the offices where our agents are located."

Moore said network management outsourcing deals like the one between Met Life and AT&T suggest a trend.

"For companies, networking is getting more complicated and expensive," he said, and "network management outsourcing is a way to outsource headaches." ▪

'Huge' Privacy Questions Loom as Wireless Use Grows

Service providers seem willing to accept stricter self-regulation than their wired peers

BY PATRICK THIBODEAU

For policy makers, wireless e-commerce is emerging as both a devil and a saint: It's capable of delivering very helpful, location-specific information while also building detailed, Big Brother-like profiles of an individual's travel patterns and other habits.

"There are huge, looming privacy issues in the wireless space because of the collection and aggregation of new information," said Alan Davidson, staff counsel at the Center for Democracy and Technology, a privacy advocacy group in Washington.

Over time, location information gathered by businesses could create "a very detailed and intrusive dossier of a person's movements," he said.

As wireless is becoming more pervasive, it's ushering in a host of location-based services that could, for instance, let companies send advertisements to people as they approach a store. In that context, if a wireless end user's location isn't available, "your smart device becomes meaningless,"

said Lawrence Ponemon, a partner at PricewaterhouseCoopers in New York. "You need very significant personalization to have success in the wireless environment."

Those opinions were shared at a workshop held by the Federal Trade Commission (FTC) last week. The FTC is examining the privacy issues in advance of a federal law that will require police, fire departments and other emergency services to have the ability by October to locate people via their wireless handsets.

Changes Ahead

The FTC, which has been urging Congress to set privacy standards for online commerce, hasn't taken a position on wireless-mobile commerce.

But the mounting Bush administration could have an impact on the FTC's emphasis on regulation. Commission Chairman Robert Pitofsky, whose term is set to expire next fall, is one of three Democrats on the five-member commission. A likely replacement as chairman may be Commissioner Orson Swindle, who, unlike

Pitofsky, has generally opposed regulation.

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User Consent Needed

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no other way to do it," MacCarthy said.

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Every aspect of the service is opt-in, and the product works better with more consumer information, said Pollard. There are a lot of services that people want personalized, and "anonymity doesn't get you there," he said. ▪

Met Life Taps AT&T To Manage Networks

Seven-year, $470M deal seen as part of trend toward outsourcing of 'headaches'

BY JAMES COPE

A IMING TO turn its wide-area network into a sales channel to speed its evolution from a life insurance company to a full-service financial services firm, Metropolitan Life Insurance Co. last week said it signed a $470 million, seven-year deal with AT&T Corp. to manage Met Life's networking infrastructure.

Under the outsourcing deal, AT&T's professional services unit will manage New York-based Met Life's 5,000-plus routers, along with its private branch exchange systems, LAN hubs and other networking devices, company officials said. AT&T will also provide connectivity among all of Met Life's offices and help the insurer develop communications standards for its business units.

Don't Waste Time

Robert Benmosche, Met Life's chairman and CEO, said in an interview with *Computerworld* that it's best to off-load network management and WAN connections to a company that's in the networking business, like AT&T.

"You really have to ask the question: Do you want to [keep network management] on your own or leverage an organization that does it for a living?" Benmosche said. "What we shouldn't do is spend time finding out where the state of the art is [in network management]."

Jeff Moore, an analyst at Current Analysis Inc. in Sterling, Va., said the deal makes a lot of sense for Met Life. "The company has 700-plus locations, and they're interested in selling financial services, not IT," Moore said.

Hunk Hamilton, vice president of technology at Met Life, said the company sees the agreement more as a business alliance than an outsourcing pact. "The deal has been cooking over the past 18 months," Hamilton said. "We were waiting to see how AT&T was going to reorganize" [News, Oct. 30].

Met Life will turn over network management to AT&T Feb. 1, Benmosche said. At that time, approximately 60 Met Life IT employees will be transferred to AT&T's payroll.

The transfer will benefit all involved, including the employees who move to AT&T, said Benmosche. Those employees will be working in a progressive environment with the latest technologies, he said, and their knowledge of Met Life will help smooth the transition of network management to AT&T.

"One of the reasons we selected AT&T is because there is a lot of synergy around our

strategies on how to support the consumer," Hamilton said.

"We have 2,000 zippers in our sales force who are going into homes on a daily basis. We don't want these people hiding behind computers in the office," Met Life salespeople must have network access from wherever they are, as do retail and institutional customers, he said. Hamilton said the Met Life network will need to support

new services that the company plans to offer. Next year, for example, Met Life plans to open an Internet bank and offer more services to corporate customers via Web portals, he said.

As part of the agreement, AT&T will pay close attention to making sure users are taken care of "where [network] access begins," Benmosche said. "For us, that's usually going to be from the [customer's] home, but it could also be from cars and from the offices where our agents are located."

Moore said network management outsourcing deals like the one between Met Life and AT&T suggest a trend.

"For companies, networking is getting more complicated and expensive," he said, and "outsourcing network management is a way to outsource headaches." ■

BENMOSCHE: Leave net management to the professionals.

'Huge' Privacy Questions Loom as Wireless Use Grows

Service providers seem willing to accept stricter self-regulation than their wired peers

BY PATRICK THIBODEAU
WASHINGTON

For policy makers, wireless e-commerce is emerging as both a devil and a saint: It's capable of delivering very helpful, location-specific information while also building detailed, Big Brother-like profiles of an individual's travel patterns and other habits.

"There are huge, looming privacy issues in the wireless space because of the collection and aggregation of new information," said Alan Davidson, staff counsel at the Center for Democracy and Technology, a privacy advocacy group in Washington.

Over time, location information gathered by businesses could create "a very detailed and invasive dossier of a person's movements," he said.

As wireless is becoming more pervasive, it's ushering in a host of location-based services that could, for instance, let companies send advertisements to people as they approach a store. In that context, if a wireless end user's location isn't available, "your smart device becomes meaningless,"

said Lawrence Ponemon, a partner at PricewaterhouseCoopers in New York. "You need very significant personalization to have success in the wireless environment."

Those opinions were shared at a workshop held by the Federal Trade Commission (FTC) last week. The FTC is examining the privacy issues in advance of a federal law that will require police, fire departments and other emergency services to have the ability by October to locate people via their wireless handsets.

Changes Ahead

The FTC, which has been urging Congress to set privacy standards for online commerce, hasn't taken a position on wireless mobile commerce.

But the incoming Bush administration could have an impact on the FTC's emphasis on regulation. Commission Chairman Robert Pitofsky, whose term is set to expire next fall, is one of three Democrats on the five-member commission. A likely replacement as chairman may be Commissioner Orson Swindle, who, unlike

Pitofsky, has generally opposed regulation.

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Pitfall:

Day

Lernout & Hauspie Users Fear for Future

Users say speech-recognition software is hard to replace, but some are switching

BY LUCAS MEARIAN

AS LERNOUT & Hauspie Speech Products NV (L&H) struggles to avoid a possible liquidation, some users and vendors that rely on the company's speech-recognition software said they are becoming concerned about the future of L&H products.

Paul Kalish, director of pathology at North Shore University Hospital in Glen Cove, N.Y., said no other software vendor offers a voice-to-text medical transcription system as complete as one developed by Ieper, Belgium-based L&H. He said the cost and difficulty of replacing the software if L&H goes belly-up worries him.

"There really is no competitor out there that we can turn to in a hurry to replace this system." said Kalish. He added that he's dependent on the software for preparing reports after cutting a transcriber's position from his office's budget.

L&H's future remains uncertain following a Dec. 8 decision by a Belgian court to reject its request for protection under that country's bankruptcy laws. The company, which also filed for bankruptcy protection in the U.S., last week said it plans to appeal in Belgium. But in a second decision, the court there froze L&H's assets and appointed a trio of administrators to monitor the company.

L&H, which has U.S. headquarters in Burlington, Mass., is being investigated by the U.S. Securities and Exchange Commission because of questions about some of its report-

ed sales. And shortly before making the bankruptcy filings late last month, the software vendor discovered that $100 million was missing from its South Korean subsidiary.

Jackie Fenn, an analyst at Gartner Group Inc. in Stamford, Conn., said she expects users and companies that have been considering technology partnerships with L&H to remain at "arm's length" until L&H's prospects are clearer.

Competition Looming

Not everyone is expressing concern. A spokesman at Intel Corp. said the chip maker "has so far been happy with the progress" of an Internet application development joint venture with L&H called NavLex.

But Mark Plakias, an analyst at The Kelsey Group in Princeton, N.J., said the bankruptcy filing is forcing users to at least consider alternative technologies. In the U.S. market, L&H has three major competitors:

> There really
> is no competitor
> ... to replace
> this system.
>
> PAUL KALISH, NORTH SHORE
> UNIVERSITY HOSPITAL

Nuance Communications in Menlo Park, Calif.; Speechwork International Inc. in Boston; and Vienna-based Philips Speech Processing.

NetByTel Inc., a Boca Raton, Fla., vendor that uses L&H's RealSpeak in a system that lets Internet users do business via telephone, is already switching. Paul Robinson, NetByTel's president, said the company recently signed a deal to replace RealSpeak with a similar product developed by Speechwork International.

"I think Lernout & Hauspie clearly has had a lot of problems, but one of the biggest is probably that they're being overshadowed by a better product now," said Robinson. ▶

Sears Increases Use of Voice Response Systems

Outsourced projects offer inventory info

BY JAMES COPE

Although Sears, Roebuck and Co. had interactive voice-response (IVR) systems for ongoing customer service, the company found that creating applications keyed to support special projects or promotions was complex and time-consuming. So the retailer turned to an outsourcer that can quickly create and host IVR applications as the need arises.

Hoffman Estates, Ill.-based Sears has been working with IVR service provider Telera in Campbell, Calif., since last year to track advertising response on its Die Hard car battery promotions and to support parts orders from professional me-

chanics, said Kevin McLinden, manager of telecommunications technology at Sears.

Last week, McLinden said the experience on these projects had persuaded him to outsource IVR to Telera for two other projects that he plans to roll out in the first quarter of next year. One is a voice information system for contractors

that buy Sears appliances for apartment complexes they're building. "[Contractors] can simply call in and punch in item information over the phone to find out if it's in stock at a specific location," McLinden explained.

Businesses need to understand that the telephone isn't going away anytime soon, said Elizabeth Herrell, an analyst at Giga Information Group Inc. in Cambridge, Mass. "It's a cost-effective way for customers to serve themselves, and it's only going to improve," she said.

Another voice application

that McLinden will outsource next year is for the Sears Home Services group. "These are the Sears people who install and do maintenance on a wide variety of products for the home, such as plumbing appliances and garage doors," he said.

Tracking Advertising Response

The interactive voice system for Sears Home Services will be used to track advertising response. McLinden said it will operate much like the system set up for the Die Hard promotion, which costs Sears $4,000 to $5,000 per month.

McLinden said that when a customer calls a toll-free number listed in an advertisement, the voice system immediately plays an audio track about availability and logs the inquiry to a special Web server. Intel Corp. subsidiary Dialogic Corp. in Parsippany, N.J., makes the servers. Sears' marketing staff can view the logs via a Web browser and use the information to create reports on how effective the advertising is, he said. ▶

SEARS uses IVR to track response to Die Hard car battery promotions.

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eDirections in January. Focusing on Microsoft .NET, it could be your first look at the future. *Yours.*

Microsoft's BizTalk Server Finally Hits the Market

Early adopters see benefits with beta

BY CAROL SLIWA

THE LONG-AWAITED BizTalk Server that Microsoft Corp. hopes will make it a player in the business-to-business space hit the manufacturing stage last week, a year later than originally pledged. But analysts say that shouldn't matter because many potential customers are just starting to delve into the sort of XML-based transactions BizTalk Server can help them execute.

Some companies have been so eager to get their hands on the product that they have been using beta versions. Despite the fact that BizTalk Server won't ship until next month, Microsoft claimed last week that more than 50 customers have been piloting the software for internal application integration or external data exchange with business partners.

BizTalk Server, which runs on Windows 2000 in conjunction with other Microsoft products, can help a company translate or map data from one format to another and securely and reliably deliver those messages. Orchestration tools further assist with design, creation and management of business processes. "It does very sophisticated things on your behalf — things that would be exceptionally difficult to code by hand," said Peter O'Kelly, an analyst at Boston-based Patricia Seybald Group.

John Wall, chief technology officer at HealthAxis Inc. in Irving, Texas, said developers wrote 5,000 lines of code to build an enrollment process for one insurance company. Re-engineering the process using BizTalk's orchestration tool reduced the code to roughly 100 lines, Wall said.

"This effectively eliminates what we've traditionally had to hard-code," Wall said.

Wall's company, which is a Microsoft Certified Solution Provider, was first drawn to BizTalk when it decided to standardize on XML.

partner. A team of three to five developers formerly needed three to five months for a typical data integration project with an insurance carrier, Wall said. "We're on the verge of hitting 30 days," he said, adding that transactions are now done in real time.

XML and cost considerations drew Haystack Toy Co. in St. Louis to a Microsoft-based BizTalk system to transmit inventory and shipment data to its outside fulfillment company and business partners.

Haystack scrapped a Unix project as the price tag soared past the originally projected $3 million to more than $4 million, said Chief Technology Officer Mark Sundt. He said his company has so far spent $800,000 on the software, hardware and outside consultants for its Microsoft-based Web system.

"I was intent from the beginning to do XML," Sundt said. "I wanted to build a message-based solution, not an application interface programming solution."

HealthAxis, which provides services and software to health insurance providers and third-party administrators, interacts with firms that need to receive data in a wide range of formats. Now, HealthAxis can use XML as the format for its internal and messaging layers. BizTalk Server converts the XML data into the format needed by the business

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Oracle Counters Microsoft's .Net Initiative

Hopes for advantage by releasing online services apps first

BY MARC L. SONGINI

Countering the .Net initiative that bitter rival Microsoft Corp. announced earlier this year, Oracle Corp. last week released software for use in developing and managing online services.

In a swipe at Microsoft, which doesn't expect to deliver a full portfolio of its .Net-based technologies for two years or more, Oracle is informally referring to its Oracle9i Dynamic Services software as Now.

"There is a tough decision to be made," said James Governor, an analyst at Nashua, N.H.-based consultancy Illuminata Inc.

Noting that users will have to decide between Microsoft's and Oracle's approaches to tying their applications to Web services, Governor suggested that enterprise users should start getting their developers to test both sets of tools now and decide which vision is best for their company.

Barry Goffe, a manager of .Net development at Microsoft, claimed that Oracle is using Dynamic Services as a way to "lock customers into end-to-end Oracle solutions." The application-programming interfaces being rolled out would require users to tear out their infrastructure and replace it with Oracle, Goffe said.

Not so, said officials at Oracle. The software will work with services built on top of Microsoft's .Net specifications, according to an Oracle spokeswoman. "There's nothing proprietary about it," she said.

Driven by Standards

According to Oracle officials, the applications will be able to use XML, Java and other standard technologies to place system calls to Web sites, online databases, sources of aggregated content and other services built on the Internet to carry out tasks ranging from currency conversion to processing health insurance claims.

Central to Oracle9i Dynamic Services is a policy and service management engine that dictates how Web-based services operate, Oracle said. Application developers will be able to create rules that customize services for users.

Nardo Manaloto, a business development director at Oracle user e2i Corp. in Fremont, Calif., said the new software should give Oracle "a fighting chance" in the market for tools that can be used to build integrated Web services. "Oracle needs to have an answer to Microsoft's [.Net] strategy," said Manaloto, whose company offers marketing services to corporate clients.

E2i is installing Oracle's financial applications and using the Dynamic Services software to help solve some of the front-end problems that arise when doing such things as integrating different Web sites, Manaloto said.

Dynamic Services is scheduled free of charge as part of the current release of the Oracle9i database. Oracle said software developers can download a tool kit from its Web site. ▶

VeriSign Error Releases Customer E-Mail Addresses

BY MARIA TROMBLY

One of the Internet's best-known security and identity firms, VeriSign Inc. in Mountain View, Calif., last week accidentally released a list of more than 5,000 customer e-mail addresses.

"It was an administrative error," said VeriSign spokesman Christopher Clough. He added that VeriSign discovered the mistake Wednesday and immediately began contacting the 1,000 people who received the list in an attachment to an e-mail announcing a branding change. This list — which included 5,435 e-mail addresses of customers of Intuit Inc.'s QuickBooks Merchant Account Service — had no other identifying information and didn't include any financial data. VeriSign provides payment service for QuickBooks customers.

Intuit spokesman Michael Rumfer said he expects his firm, also in Mountain View, to continue its relationship with VeriSign. "We regret that it happened," he said. "But we worked with VeriSign to inform everyone that we are taking steps to ensure that it doesn't happen again." ▶

Temp Suit Sounds Alert

Companies will revisit policies in wake of $97M Microsoft settlement, analysts say

BY JULEKHA DASH

LABOR EXPERTS said Microsoft Corp.'s $97 million settlement of a class-action lawsuit involving temporary employees will force companies to scrutinize how they classify their temporary and contract workers.

Microsoft will pay the money to 8,000 temporary workers — dubbed "permatemps" — and their lawyers, who charged that the company should have offered the temps stock option benefits. The settlement would end an 8-year-old suit against the company.

"Microsoft just sent a $100 million message . . . to corporate America that if you have permatemps, either make them full-time employees or make sure they're true temporary or contract workers," said Marcus Courtney, co-founder of the Seattle-based Washington Alliance of Technology Workers (WashTech) and a former Microsoft permatemp. WashTech organized on behalf of Microsoft's permatemps.

According to the American Staffing Association (ASA) in Alexandria, Va., technology jobs accounted for about 11% of the payroll for all temporary positions in 1998, though such workers represent little more than 2% of the workforce.

Mark Roberts, the ASA's general counsel, said one of Microsoft's mistakes was that it used ambiguous language in drafting the benefit plans that distinguish employees from temporary workers. Employers should draft sound contracts that make it clear "in the eyes of the IRS or courts" whether the worker is a contractor or an employee, he said.

Some companies make the mistake of classifying workers as contractors even though they work side by side with full-time employees, performing the same functions, said Raymond Dixson, a labor attorney at Fenwick & West LLP in Palo Alto, Calif. Characteristics that distinguish contractors from full-time employees include work on discrete projects, work for a flat fee and work that doesn't require close supervision, said Dixson.

"Sometimes companies realize that they can't make [something] a contractor because of the nature of their work," he said. This includes some programming positions that require supervision, he said.

Some employers may find that IT workers want to work as contractors because they like the flexibility, said Dixson. In such situations, companies should make sure that the working relationship is set up as a contract relationship at the outset, ensuring that contractors rely on their own equipment and resources, such as e-mail accounts and business cards, he said.

Courtney said the settlement probably doesn't represent the end of the use of contractors, but it may be a spur to re-evaluate policies.

Schwab Tightens Spending

BY MARIA TROMBLY

In response to a slight drop in its customers' stock trading and decreased revenue, officials at discount brokerage Charles Schwab & Co. said the company plans to freeze hiring and review project spending.

Company spokesman Glen Mathison said total daily average trades dropped 16% from October to November, to 194,000. That was 4% lower than the amount of trades in the same period last year. "The market is slower," he said, adding that Schwab didn't have any projections of when the market might turn around.

In a statement, Schwab President and co-CEO David Pottruck attributed the trading drop to election-related uncertainty, as well as to signs of a slowdown in corporate earnings and the economy.

Mathison said Schwab has put a stop to all hiring, except for critical positions on an "exception-only" basis. The San Francisco-based brokerage is also reviewing all projects to determine which ones can be postponed. These may include IT-related efforts, he added. Mathison declined to estimate how much money the firm expects to save through the cost-cutting moves.

Industry Bellwether

According to Dan Burke, an analyst at Lincoln, Mass.-based Gomez Advisors Inc., other online brokerages could soon follow in Schwab's footsteps.

"Schwab is definitely in the bellwethers in the industry," he said. "The slowdown in retail transaction volumes is having an effect — the challenge is to build up alternative revenue streams."

There are a couple hundred online brokerage firms competing in a tightening market, according to Larry Tabb, an analyst at Needham, Mass.-based TowerGroup, who said he expects to see consolidation among the smaller players. "It's not a happy time," he said. "Everybody right now is going through an evaluation plan."

Sysadmin Salary Survey: Do You Measure Up?

BY DAN ORZECH

If you're a male Unix systems administrator, chances are good that you earn almost $90,000 per year more than your Windows counterparts, according to a survey released last week by the SANS Institute in Bethesda, Md.

Systems administrators for Unix-based systems earn an average of $70,080, while administrators for Windows-based systems earn an average salary of $61,231, according to the SANS 2000 annual salary survey of systems and network administrators and security con-

sultants. Network administrators earn an average of $58,999. The salary average of the 7,038 systems administrators surveyed by the SANS Institute was $65,528. However, the biggest money continues to be in the security consulting business. Security consultants earn an average of $79,996.

Alan Paller, director of the SANS Institute, said security professionals will likely continue to be able to demand high salaries as long as the economy remains on the upswing. "As the world continues to add 2.5 million new systems

to the Internet every 30 days, the thirst for security people will continue unabated," said Paller. "If the expected recession actually penetrates deeply enough to slow the growth of the Internet from explosive to just large, however, then companies may begin to be more selective and give the higher pay to those who can show demonstrable technical skills."

Women continue to earn less and receive smaller raises than their male counterparts, according to the survey. Men reported raises of 11.8% while women reported raises of only 9.86%. However, there is one exception: Women who manage primarily Windows and Novell systems and have college degrees have surpassed their male counterparts in earnings, the survey said.

MILES DAVIS
Jazz Pioneer

What do YOU do best?

Companies of All Sizes Bid For Piece of Wireless Action

Tiny Theta Communications plunks down $164M for N.Y. spectrum; shills suspected

BY BOB BREWIN

WIRELESS communications carriers spent much of last week jockeying for position in a Federal Communications Commission auction for cellular licenses in 195 markets.

Meanwhile, Theta Communications, a small company in New York, emerged as the high bidder in an auction round that ended last Thursday morning.

Analysts said it was too early to discern any pattern in the bidding by the 87 small and large carriers vying for spectrum, which could eventually command total bids of as much as $16 billion.

"This is like watching a baseball game with 150 innings," said Craig Mathias, an analyst at Farpoint Group in Ashland, Mass.

Mathias said it's hard to make "any sense [of bidding patterns], and it [won't] be evident for a couple of weeks" which markets carriers are willing to make high and potentially winning bids on.

minster, N.J., made the high bids for the Los Angeles market, with bids of $44 million apiece.

Two owners of small businesses charged that partnerships between large carriers and smaller companies such as Salmon PCS LLC are intended to subvert the auction process. The auction rules allocate one-

third of the frequencies in large markets such as New York to small companies and two-thirds of the spectrum in smaller markets to bidders that qualify for "entrepreneur" status and credits in the auction.

Dan Pegg, senior vice president for public affairs at Leap Wireless International Inc. in San Diego, said companies like Salmon PCS and Anchorage, Alaska-based Alaska Native Wireless LLC — which is partnered with Redmond, Wash.-based AT&T Wireless Group

— are acting as "shills" for the large carriers.

Allegheny Communications Connect Inc. in Pittsburgh made a last-minute attempt to stop the auction by filing a lawsuit in federal court. But the suit was quickly dismissed.

Paul Posner, president of Allegheny, called the carrier partnerships "sham" bids that "contaminated" the auction process.

Alan Todd, a vice president at Dayton Ltd. in Fairbanks, Alaska, one of the partners in

Alaska Native, said his company intends to be "an active, not passive, investor" in any licenses it wins.

George Crowley, an investor in Chevy Chase, Md., who holds a controlling interest in Salmon PCS, didn't return repeated calls for comment.

E-Surfing

Unreal Estate

Fierce infighting for the cellular spectrum at the auction is to be expected, since "spectrum is like real estate. God only made so much of it," said Steve Roberts, chairman of WatchMark Corp., a Bellevue, Wash.-based company that provides wireless software to the major carriers.

Mathias predicted that the auction will end shortly after the start of the new year. Until then, bidders and analysts say companies will raise their bids incrementally until competitors vying for a license in a particular market withdraw after reaching their financial thresholds.

Theta Communications made three bids for the New York market, with a total of $164 million. VoiceStream Wireless Corp., also in Bellevue, and Verizon Wireless Inc. in Bed-

for the most part, the policies seem to be working.

In a recent survey conducted by the Santa Clara, Calif.-based Saratoga Institute, only 4.3% of the 244 companies that responded said they were "extremely concerned" about employees surfing the Net for personal reasons. Some 15.2% said they weren't at all concerned, and about 50% said they were "somewhat or more concerned."

"Everyone is aware of [the issue of Web-shopping at work], but very few companies are doing anything about it," said Michael Kelly, the study's author. "The legal scouts have not sent back much useful information on the right to privacy."

The Medstat Group Inc. in Ann Arbor, Mich., is one company that has never had productivity problems among its 700 employees as a result of Internet use, said Michael J. Karaman, vice president and chief technology officer for product development.

"At the same time, we recognize and tolerate a small amount of personal use," Karaman said. "This flexibility has become more important as the workday extends beyond the workplace and into the home."

At minimum, Kelly advocates that organizations whose employees have Internet access create acceptable-use

policies, and many said they have already done so.

Of the companies surveyed by the Saratoga Institute, 82.6% said they have a written Internet use policy, and 42.9% said they include it in their employee handbooks.

One such company is Las Vegas-based law firm Barker, Brown, Busby, Chrisman & Thomas PC. Jeremy Brummett, who manages the firm's IT systems, said he published an acceptable-use policy primarily because of liability concerns.

> **The legal scouts have not sent back much useful information on the right to privacy.**
>
> MICHAEL KELLY,
> SARATOGA INSTITUTE

"We didn't want to find out down the road that there was reason to have [a policy] when we didn't," said Brummett. Employees must sign the policy, which says they agree not to visit objectionable Internet sites or use company e-mail assets to send objectionable or harassing information, he said.

Joy Harris, a spokeswoman

for Eden Prairie, Minn.-based Best Buy Co., said Best Buy's policy allows "reasonable" use of company systems for informal or personal purposes, such as during lunch periods or breaks.

"It is the responsibility of each employee to comply with the policy and of managers to monitor and ensure compliance," Harris said.

And that's just the way it should be, said Jill Frankle, an analyst at Gomez Advisors Inc. in Lincoln, Mass. Although there is plenty of evidence that people are shopping online at work, measuring productivity losses from it is very difficult, she said.

And despite personal use, the Internet and e-mail give employees more flexibility to balance a productive career with their personal lives.

"Companies are empowering their employees with these tools and empowering them to be responsible employees," said Frankle.

But not everybody sees it that way. "The person making their [online] purchase is not necessarily doing their work, and they could be affecting other people's work as well by soaking up bandwidth," said Kevin Blakeman, president of U.S. operations at SurfControl PLC, a Scotts Valley, Calif.-based firm that develops Internet usage-monitoring tools that can alert companies when their employees are visiting objectionable Web sites.

SurfControl recently com-

pleted a study that found that 30% to 40% of corporate productivity is lost due to personal use of the Internet, and nearly three quarters of workers with Internet access acknowledged that their personal use slows down their company's network.

The Saratoga Institute also acknowledges that personal usage that gets out of control can cost companies a lot in lost productivity.

In fact, a company with 1,000 Internet users who do personal Web surfing for one hour per day can lose more than $35 million in productivity costs each year, according to the institute.

Sam Asher, president of Sam Asher Computing Services Inc., a 30-person custom software development firm in Rochester, N.Y., said he sees his employees using the Internet for non-work-related reasons all of the time.

"I don't have a problem with it. This is no different than using a phone, photocopier or other office items for personal use," said Asher. "My sense is that . . . those that abuse their opportunities abuse all of their opportunities. For those who do a good job, I am happy to make the service available to them."

Karaman agreed draconian monitoring isn't the answer.

"No amount of policing will ever eliminate inappropriate behavior," said Karaman. "Companies should hire people who fit the corporate culture, spend the time to adequately orient and train them, then get out of the way and let them do their job." ■

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in freemarkets' world, there's no such thing as quitting time. so they needed a platform that wouldn't punch a clock either. freemarkets selected intel-based servers and the microsoft web solution platform to provide that reliability, and the choice has paid off handsomely. to date, freemarkets has executed over 7,000 online auctions of more than $10.5 billion in goods and services. it's a true global marketplace where buyers and sellers all over the world always get up-to-the-minute, competitive pricing. and it's proof that for many of the world's leading e-businesses, microsoft and intel e-commerce solutions are fast becoming the answer when every mission is critical. (see more case studies ➔ intel.com/go/freemarkets)

Microsoft | int_el_

Trading Nets Give Exchanges A Run for Their Money

NYSE and Nasdaq fight back with new services, but the battle is far from over

Part of a continuing series on the impact of technology on Wall Street.

BY DEBORAH RADCLIFF

For the NYSE a select group of services has held captive some of the key information Wall Street traders need to make the most informed decisions on Buy and Sell orders. But the three-year rise of the electronic communications networks (ECN) has forced the old guard to redesign its technology —and its business.

Yet the battle is far from over. While the New York Stock Exchange (NYSE) has rolled out the first phase of its ECN-like service, Network NYSE, Washington-based Nasdaq Stock Market Inc.'s ECN-like offering, has been stymied by complaints about the algorithm it

uses stalling the project before the Securities and Exchange Commission (SEC) for almost two years.

The winning model may eventually be a hybrid — one that combines the liquidity of a traditional stock exchange and the speed and direct access of an ECN, analysts said.

"This is a fast-moving time," said Roger Birkhardt, senior vice president and chief technology officer of trading systems development at the NYSE. "It's all about choice — choice in access, execution and connectivity in [such] a way [that] the consumer can decide what suits them best. It's [also] about the commitment of technology and capital."

ECNs — simple order-matching networks such as those of Archipelago Holdings LLC in Chicago and The Island

ECN Inc. in New York — make their money through transaction or access fees. They handle an estimated 5% of Nasdaq's volume in any given period as well as a much smaller 3% to 4% of trading on the NYSE, according to Meridien Research Inc. in Newton, Mass.

Tightening the Profit Margin

On the NYSE and Nasdaq, all trades are conducted through middlemen who work on the trading floors. Nasdaq calls them "market makers," while the NYSE refers to them as "market specialists." When no buyer is immediately available, they put up their own capital — with the backing of securities firms like The Goldman Sachs Group Inc. and Merrill Lynch & Co., both in New York — to meet a Sell order. Then they find a buyer, sell those stocks at a higher price and pocket the difference. The wider the spread, the bigger the profit.

That difference in pricing policies is one point of contention between the ECNs and the exchanges. "Regulatory reasons have allowed ECNs to collect access fees when a broker dealer places a Buy order against an ECN offering to sell. That's an enormous regulatory subsidy that ECNs have had in the market," Birkhardt said.

But the real problem is that the ECN pricing model threatens those fat Wall Street spreads, said John Oddie, CEO of global equities business at top-trading ECN Instinet Corp. in New York. He said he sees nothing wrong with the ECN model, it's just different. "Our model is to charge commission when we execute a trade, while the market makers buy at one price and sell at another and make a commission," he said.

As traders stampeded to ECN trading, Nasdaq had no choice but to try to meet this new form of customer demand. Two years ago, Nasdaq and the NYSE began to overhaul their information systems to add more services, including ECN-like trade matching, at speeds that would rival the ECNs'

subsecond trade matches.

Encountering little resistance from the ECN community is the NYSE rolled out Phase 1 of its new network, Network NYSE, this quarter, with completion of all phases scheduled for the third quarter of next year. More than 90% of the NYSE's trades are already conducted electronically, and the ultimate goal is to rid the trading floor of paper orders altogether, said Birkhardt.

Nasdaq, however, has encountered heavy resistance from the ECN community and is keeping SuperMontage on the

algorithm that matches the orders," Oddie explained. "In any other electronic exchange that runs an order, the first person with the best price is the first one to get an order filled. There's no guarantee in the Montage that this will happen."

It's true that ECN trades may not get executed first, even if those Buy and Sell orders are first-to-market at the best price, acknowledged Scott Peterson, a Nasdaq spokesman. With SuperMontage, customers will have a choice: trade based on best price first-to-market, or make order into the priority.

"There's a possibility that the first market maker or ECN displaying the best price may not get that order filled first," he said. "For example, if a market maker or an ECN only has 100 shares, as opposed to another offer of 10,000 shares at a higher price, a customer may think it's easier and cheaper to buy all his stock in one place."

Moving Toward Liquid Markets

Order of Business
The ECN market:

16.6%	Instinet
38.9%	Island
8.0%	RediBook
0.2%	Archipelago
	Tradebook
	Brut
	NextTrade
	Attain

Analysts wouldn't predict the outcome of the ECN vs. SuperMontage battle. But Dana Stiller, a Meridien analyst, said ECNs and the old guard must combine market liquidity with direct trading if they want to survive in an increasingly electronic marketplace.

The NYSE has already made this connection. "One of our pieces of Network NYSE, called DirectPlus, is better than an ECN because it's integrated into a market that has 85% of the liquidity of the NYSE," explained Birkhardt.

Also, Wall Street mergers are leading to such consolidation of service offerings. During the past year, for example, Goldman Sachs became a partial owner of an ECN. And last month, the global investment-banking firm completed a merger with a leading market maker: Spear, Leeds & Kellogg in New York.

ECNs are also expanding their own markets, broadening their customer bases and building their own liquidity. Some are even applying for exchange status so they can make their own markets, Stiller said. For example, Instinet has been in the equities business for 20 years and has all the liquidity it needs to match trades itself.

"We're moving to liquid markets and toward fully electronic trading," said Stiller. ■

Electronic Communications Networks

Often just interconnected PCs, ECNs automatically match their money through split-second, anonymous direct trading. The U.S. stock exchanges are developing the following ECN-like offerings:

Network NYSE:
Expected to be completed by next November, it will include:
- An integrated trading platform to facilitate different types of trades
- A market information platform with stock market resources and analysis
- NYSE Direct, an ECN-like direct-trading communications network for up to 1,099 shares per trade
- NYSE Institutional Express – the same thing as NYSE Direct, but able to handle larger institutional orders
- The NYSE Broker Support System, which includes a virtual trading floor and member resources

Nasdaq SuperMontage:
Though the system is still going through the SEC approval process, analysts predict that it will be operational by 2002. Proposed changes include:
- An enhanced ticker system that will show the top three prices of a stock instead of just one
- An aggregate display window, which will include aggregate depth of market
- Displayed quotes
- Aggregated interest
- Anonymous trading

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the drawing board until it clears an SEC review. ECNs have complained that SuperMontage is anticompetitive — because of its proposed ticker algorithm, in particular, which they say will favor market makers over ECNs even when their strike prices are lower than those of the market makers.

Lee Congdon, senior vice president of strategic initiatives at Nasdaq, claimed that SuperMontage won't compete directly with ECNs.

"The issue is not over whether you can see these different prices. Our fundamental problem is the way [Nasdaq developers] want to write the
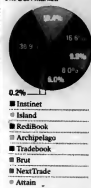
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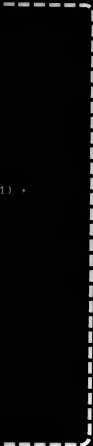00010E36. The current application will be terminated.

* Press any key to terminate the current application.
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Laos Licenses .la
For Corporate Sites

Small nations selling domain-name rights

BY TED R. WEISS

LOS ANGELES-based company last week announced a license deal with the government of Laos that gives the company rights to market the Southeast Asian nation's .la Internet top-level domain to businesses that want to use the suffix as part of their Web site addresses.

The deal between dotLA Inc. and the Laotian government is part of a growing trend in which small nations are selling rights to their country-code domains to unofficial domain-name registries. For example, the Pacific island nation of Tuvalu earlier this year signed a similar agreement for its .tv domain with dotTV Corp. in Los Angeles.

DotLA's target customers include businesses in Los Angeles, Louisiana and Latin America. Garry Donoghue, dotLA's CEO, said his company has spent about $1 million so far to develop an Internet infrastructure in Laos, which will get a share of the revenue from companies that register addresses under the .la domain.

Mixed Reactions

Businesses in Los Angeles gave mixed reviews when asked about the attraction of a .la Web address.

"From the point of view of the city, we would like that," said John Duel, a spokesman for the Los Angeles Convention & Visitor's Bureau.

But Foster Bertonen, the controller at Young Communications Group, a public relations firm, wasn't sold.

"We're so used to the old .com [domain]," he said. "It's kind of embedded in our whole corporate identity."

Michael Roberts, president and CEO of the Internet Corporation for Assigned Names and Numbers (ICANN), the nonprofit organization which manages the Internet domain name system, hasn't

taken a formal position on such licensing deals.

"We may at some point in the future, but we haven't," Roberts said. "[But] it is a legal operation for a country to license [its] domain. There's quite a number of them that have done it."

Harry Wolhandler, an analyst at ActiveMedia Research LLC in Peterborough, N.H., called such domain licensing deals "perfectly legitimate" and said they can be a boon to poorer nations that don't have the resources to develop Internet capabilities on their own.

"I think it sounds like a decent deal for the country," said Wolhandler of the agreement signed by Laos. "It's better for the Laotians to have someone

with some skills come in and help them get going [on the Internet] as long as the deal is favorable . . . to their country's own interests."

Future Plans

DotLA said it will use ICANN's domain-name dispute resolution process to settle any conflicts over Internet addresses ending in .la. The company has opened a preregistration period for businesses looking to register trademarked names. The preregistration will continue until Jan. 2, when .la will be opened to the public.

Donoghue added that dotLA is pursuing similar deals with several other small countries. ▶

XML Trading Standard to Debut in March

Designed to let companies conduct business over Web

BY MICHAEL MEEHAN

An XML standard that proponents say is a major boost for e-commerce is on the way — ahead of schedule.

The UN Center for Trade Facilitation and Electronic Business (UN/CEFACT) and the Organization for the Advancement of Structured Information Standards (OASIS) last week announced that they will be ready to deliver the Electronic Business XML trading standard in March. It was originally slated for release next summer.

The ebXML standard will establish transport, routing and trading-partner protocols for businesses looking to trade with one another on the Internet.

Bill Smith, president of Billerica, Mass.-based OASIS, said he views ebXML as a necessary step in bringing small and medium-size companies into business-to-business networks.

EDI Won't Be Replaced

"It's bringing the benefits of EDI over the Web," he said. Smith also serves as the engineering manager at Sun Microsystems Inc.'s XML center.

Smith said ebXML would complement rather than replace electronic data interchange (EDI) — still the most

popular business data exchange format, according to Ken Vollmer, an analyst at Giga Information Group Inc.

ebXML is designed to provide a simple way for companies to find one another and conduct business over the Web, allowing those with different platforms to speak a common language.

Smith estimated that global adoption of the ebXML standard will take a year.

He said he believes that UN/CEFACT's backing of ebXML will help speed that adoption.

The Geneva-based organization was also instrumental in creating and promoting EDIFACT, an international standard for EDI.

IBM on Board

IBM is among the numerous companies supporting ebXML. IBM Technologist Evangelist Steve Holbrook said his company's next line of WebSphere business products will come out next year with full support for the standard.

Other emerging standards in the next IBM WebSphere line will include Universal Description Discovery Integration (UDDI), which will create a global phone-book-like registry for business-to-business commerce, and Web Services Description Language, which will let businesses describe themselves and the platforms on which they operate inside a UDDI directory.

"We hope this becomes as ubiquitous as a [domain name] server," Holbrook said. "HTTP and HTML are what made the Web take off. We think these new standards will make online B2B commerce take off."

Vollmer said he remains skeptical that any one new standard will revolutionize the business world, noting that costs would be prohibitive for established companies to scuttle existing infrastructures. "It will be an enhancement, not a replacement," he said.

Vollmer added that transformation software is blurring the

lines between EDI and variant forms of XML.

"It doesn't make any difference which language you start with; it can all be translated," he said.

Expensive and Uncertain

Karen Peterson, an analyst at Gartner Group Inc. in Stamford, Conn., said new protocols could be expensive and difficult to implement because they will require either new equipment or network conversions.

"It's not just that I have to buy a new application — this can be very involved," she said. "And it will probably slow the speed of conversion in many companies." ▶

Kmart Hires
New CTO

BY TODD R. WEISS

Just three months after hiring a new CIO, Kmart Corp. last week announced that it's bringing in another executive from outside the company to be its chief technology and e-business officer.

Filling that job at the Troy, Mich.-based retailer will be Richard Blunck, a former senior manager in the e-business unit at Deloitte Consulting. Blunck joined Kmart Dec. 11, reporting directly to Randy Allen, who in September was named the fourth CIO in the past five years at the company. Allen also was hired away

from New York-based Deloitte Consulting, where she was a partner specializing in the retail, apparel, manufacturing and distribution industries.

Blunck focused on emerging technology and retail business-to-business ventures while at the Deloitte.com world.

Strategic Planning

At Kmart, Blunck will be responsible for IT strategic planning, identifying emerging technologies that could help the company, and managing technical interfaces to its San Francisco-based BlueLight.com LLC retailing Web site.

In addition, Blunck will represent the company on the operating and executive committees of the WorldWide Retail Exchange, an Alexandria, Va.-based retail industry business-to-business exchange. ▶

One idea

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Toysrus.com Faces Online Privacy Inquiry

BY LINDA ROSENCRANCE

Toysrus.com Inc. last week confirmed that the New Jersey Division of Consumer Affairs has launched an investigation of the online retailer's data privacy policies, although a Toysrus.com spokeswoman said the company's understanding is that the inquiry also focuses on other e-commerce ventures.

Officials at the Newark, N.J.- based consumer affairs agency, which is part of the attorney general's office in that state, couldn't be reached for comment. But Toysrus.com spokeswoman Jeanne Meyer said the e-commerce division of Toys R Us Inc. in Paramus, N.J., has already turned over "thousands of records" to the agency.

"They asked us [for the information] several weeks ago, and we are cooperating with them regarding Internet privacy," Meyer said. "We want to help anyone in the consumer protection area enforce privacy policies. Privacy is of utmost importance to us, and we do not sell or rent personal information about our customers."

Online privacy has become a hot-button topic this year, with advocacy groups pushing Congress to pass privacy-related legislation and industry groups trying to promote self-regulation policies as an alternative.
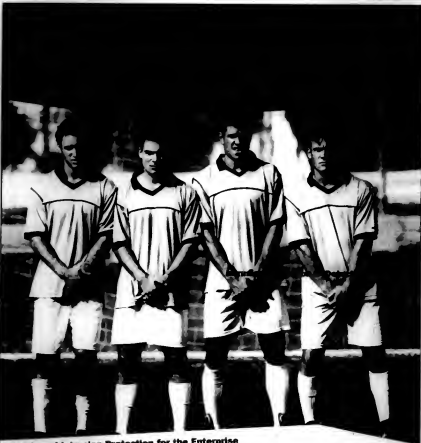
Hit With Lawsuits

Toysrus.com last summer was hit with several class-action lawsuits that charged the retailer with violating its privacy policy by sending personal information collected from online shoppers to Coremetrics Inc., a San Francisco-based company that provides data analysis services.

The lawyers who filed the suits alleged that Coremetrics is a third party, making the arrangement between the two companies a violation of Toysrus.com's promise not to share personal data with other businesses. But Coremetrics said the information it receives is used only to prepare reports on Web site usage for individual corporate clients and isn't shared with other companies.

When Toysrus.com hired Coremetrics, its privacy policy didn't specifically mention its relationship with the data analysis firm. But the policy did state that Toysrus.com may "utilize a service provider to assist us in aggregating guest information."

Meyer said Toysrus.com, which now operates a co-branded online toy store with Seattle-based Amazon.com Inc., severed its relationship with Coremetrics in August. A statement posted on the Toys R Us corporate Web site said the data-sharing deal with Coremetrics was "a trial arrangement" that was in effect for only "a short period of time."

The statement added, though, that Internet cookies may have been placed on the computers of some shoppers while the online retailer was using the Coremetrics service. ▶

Dell CEO Explains Shift From PCs

Chairman describes strategies to address market that's pounding PC makers' stocks

ROUND ROCK, TEXAS

O N DEC. 7, Dell Computer Corp.'s share price fell to a 52-week low of $17.44 after hitting a 52-week high of nearly $60 in March. On Dec. 8 at the company's headquarters here, Chairman and CEO Michael Dell spoke with *Computerworld's* Don Tennant about what Dell plans to do to make his company less vulnerable to a whimsical financial market that's punishing PC makers.

Q: As CEO, your job is to bring value to the shareholders, who can't be too happy right now. How do you plan to do that?
A: The stock market can be a frustrating thing. There are some things that you can influence and try to control, and there are some things you can't.

If you look at Dell, you've got a company that last quarter had an increase in earnings of 39%. We generated $1 billion of cash flow. We have $8 billion in cash. We have return on capital of 36%. It is true that while we did that, the price of our stock went down. But it's also true that if you keep doing that over any length of time, the price of stock will go up. It may go up faster than it should at times, and it may go down faster than it should at times. But that doesn't change our job.

Q: You've said that one of your strategies is to drive your mobile business. Will that include coming out with a handheld? A Dell-branded [model like Microsoft Corp.'s Pocket PC], perhaps?
A: Right now, the [handheld market] seems fairly confusing. It's not clear who the winner is in that. But we're looking at that. If you look at the category of mobile computing, handhelds represent 18% to 20% of the unit volume, but it's only about 4% of the revenue. According to IDC, it's expect-

ed to grow tremendously to perhaps as much as 45% of the unit volume, but it will still be only 9% of the revenue. So it's important, but it's about 10 times less important in revenue terms than the notebook.

Q: So what are the chances of seeing a Dell-branded handheld a year from now?
A: Too soon to say. We're looking at it. But I can tell you this: If you do see one, chances of it being more than 10% of our mobile revenue, even five years from now, are pretty slim.

Q: Desktop PCs represent about half of your revenue and one-third of your profit. Where do you see

that curve heading?
A: Down. The shift to mobile and the growth in the server, storage and services [businesses] will drive it down. It's not going to go away. You've got to have something to see all the data.

Q: As you continue to diversify away from desktop PCs, is it part of your strategy to make acquisitions to accelerate the shift?
A: Well, things are getting cheaper and cheaper every day. Acquisitions are not something that you should approach abruptly. But if you're going to see acquisitions by Dell, and I think it's highly likely, they would most probably be smaller acquisitions in these other areas where Dell is expanding —

storage, services and wireless.

Q: You've made it very clear that you're interested in the Linux market. Do you feel as if [Microsoft Chairman] Bill Gates and [Microsoft President and CEO] Steve Ballmer are keeping an eye on you?
A: When I think about Linux, I don't think about Ballmer and Gates. For Unix-centric customers, we think Linux is a great alternative to [Sun Microsystems Inc.'s] Solaris. The gestation cycle for Linux is a fairly long one, so we don't expect that this thing will all of a

sudden be a massive percentage of the market.

Q: Has Microsoft approached you directly to talk about your Linux plans?
A: It certainly has been a topic of discussion. What we've tried to impress upon them is that there are reasons why people are buying this, and we try to help them understand what we think those are. To the extent that they want to address those, great. Competition is a beautiful thing.

MICHAEL DELL

Peregrine Acquires Tivoli Software Suite

BY SAMI LAIS

IBM said last week it will sell its Tivoli Service Desk software suite to Peregrine Systems Inc. for $105 million — $45 million in cash, and the rest in stock.

IBM obtained the software suite that formed the basis of Tivoli Service Desk in 1998 when it acquired Software Artistry Inc. for a little more than $200 million.

Patrick Dryden, an analyst at Nashua, N.H.-based Illuminata Inc., suggested that the decision to sell off the Tivoli Service Desk offering was an indication that IBM might not have gotten what it hoped for with the acquisition.

The sale "is not so much a Peregrine falcon preying on a Tivoli turkey as it is [an acknowledgment] by IBM that the best tool is not Tivoli's," Dryden said.

Astrid Burnette, a director of product strategy at Tivoli Systems Inc., an IBM subsidiary in Austin, Texas, said the dis-

agreed. "This is a fast-paced industry, and we continue to look at our investment strategy," she said. "While the Tivoli offering is an excellent product, that was not an area we were going to invest in."

In a Better Position

San Diego-based Peregrine, on the other hand, is "totally focused" on the service-desk space and is in a better position to deliver what companies need, Burnette said.

Peregrine will integrate the Tivoli Service Desk products into the new versions of its ServiceCenter and AssetCenter products, both of which are due by the middle of next year, said Tivoli President David Murphy. The integrated product will provide Tivoli users with "a clear migration path," he said.

The transfer of the software to Peregrine, a strong player in the asset management market, should be good for Tivoli users, Dryden said. Tivoli Ser-

vice Desk "never integrated that well with [the] Tivoli Enterprise" framework, he said.

Peregrine will also take over support for Tivoli's 1,000 Service Desk customers.

But some users expressed doubts. "I'm not terribly happy about it," said Dwight Gibbs, chief technology officer at The Motley Fool Inc. in Alexandria, Va. "Now my one-vendor solution is going to be a two-vendor solution."

Following an extensive product comparison, Motley Fool earlier this year implemented Tivoli's Enterprise framework and several other modules, including Tivoli Service Desk and Help Desk.

A perception that the Tivoli and Motley Fool cultures were in sync was one factor behind the investment firm's choice of Tivoli, Gibbs said. "But I'm not wild about the way I found out about the sale," he said, referring to the Dec. 11 press announcement. "Not an e-mail, not a call — nothing." ◆

MARYFRAN JOHNSON

Spinning It Down

THIS TIME LAST YEAR, we were all spun up about Y2k and the possibility of electronic catastrophe as the clock ticked over to 2000. We know better now.

This time last year, we were all convinced that the rising tide of dot-com businesses would sweep traditional

brick-and-mortars out to sea, drained of their most talented, innovative employees. We know better now.

This time last year, we thought we knew how to protect online customer privacy and keep enterprise networks secure and safe from attacks — well, you get my drift.

When you take a backward glance through 2000, you can't help but notice the yawning gap between hype and reality. Of course, some of that yawning might be pure and simple exhaustion. A recent Meta Group study found that IT professionals are spending 30% more time at work than they did a year ago. Employee turnover in IT is still rising, despite the slowing economy and deflating dot-coms.

There's even been a decidedly weary air to some of the vendors trooping through Computerworld's offices of late. Their marketing pitches are filled with explanations of where those high-hopes business models took a wrong turn and how they're refocusing hard on "liquidity" (i.e., profitability). Instead of spinning up plans and promises, they're consciously spinning them down. They're figuring out what they can really deliver. I think this phenomenon is happening in the world outside of the tech industry,

too, where the simplify-your-life trend is gaining ground.

So as we all collapse gratefully into the holidays over the next few weeks, set aside some time to think about your own spin cycle. Reorder your priorities and sift out the ones that matter the most — to you personally, to your IT colleagues, to your company and to its customers.

What will your IT agenda be in 2001?

We've given a lot of thought to that as we prepared a special report that will appear in two weeks in our first issue of the new year. Our IT Agenda 2001 sets out a blueprint for IT leadership, sketching out a lot of sensible advice and actionable ideas from your peers. Our 10-point to-do list covers everything from the impact of globalizing your business and retooling your data center to finding the real payback from wireless technologies, snagging (and keeping) the best talent and dealing effectively with other core essentials in security, Web content management, government regulation and B2B integration.

Here's hoping some of that guidance will have rung true by the time next year spins to a close. Have a happy and peaceful holiday season. ▶

Maryfran Johnson is editor in chief of Computerworld. You can contact her at maryfran_johnson@ computerworld.com.

PIMM FOX

There's Talent Aplenty Amid Dot-com Rubble

AS AN IT MANAGER, you need talent to complete projects and fill positions. And now, you're in luck.

The Internet economy is stumbling, corporate profits in general are uncertain and investors' appetite for high tech has nose-dived as stocks have taken an end-of-the-year beating amid some fourth-quarter profit warnings and revenue shortfalls.

This could be the right time to start assembling your dream team of qualified, experienced IT pros who, until now, have been too busy chasing stock options to return your recruiting calls.

But not so fast.

No matter how bad the tech market gets, the talent you want won't let you call all the shots in your recruiting pitches.

Good IT people want to work on interesting projects; they're not interested in standard, run-of-the-mill jobs. If you're hunting for IT skills, consider that the best people often take on projects that last only for "about 12 to 13 to 14 months," says Jon Slavet, co-CEO and co-founder of San Francisco-based Guru.com.

When uncertainty in the market bites, as it has recently, it can cause talented individuals to reconsider where their chief loyalties lie: with their careers or with their companies.

"In the context of volatility, some people might want the most security possible, but those with the best skills may also want to take their careers into their own hands," says Slavet, whose company produces an online marketplace connecting freelancers and consultants with contract projects in IT organizations.

Indeed, Slavet says that the more talented the person, especially in IT, the more he can shift from engagement to engagement. This means that project managers will have to adjust to using teams of outside IT personnel who have portable and highly sought-after skills.

"The manager has to be creative and be able to sell the proposition that a particular goal is interesting and vital," which is why people choose one project over another, Slavet says.

Right now, Slavet says, he sees an influx of Java programmers, though he adds that there's also a lot of activity in business development and marketing, mainly from tech-savvy people who have been let go or released from Internet companies.

But Slavet cautions IT managers not to assume

Pimm Fox is Computerworld's West Coast bureau chief. Contact him at pimm_fox@ computerworld.com.

"CAN I SEE A COPY OF YOUR PRIVACY POLICY?"

NEWSOPINION

that people who work on their own have been downsized. Most people who work for themselves, especially in the IT space, do so because they choose to, and using them can be a different way to access IT talent.

While the current Internet downdraft might serve up a little more talent, use this opportunity to recognize the fundamental shift in the way people like to work. Highly skilled people will continue to go from project to project, so don't waste energy trying to lure them as full-time employees.

By seeking out contractors rather than employees, at least you won't have to worry about their long-term loyalty. Clearly, that doesn't exist. ◗

JOHN GANTZ

Don't Expect Quick Comeback For Net Stocks

I'M A LITTLE touchy about high-tech stock crashes. Back in the '80s, I was a PC stock market columnist for *Infoworld*. Between the time I was recruited — during an incredible PC stock boom fueled by overflowing venture capital pools, hordes of start-ups and the best IPO market in history — and the time I started actually writing the column, the market went bust.

So, hired as a headline writer, I spent the next two years writing obituaries. Eagle Computer, Victor Technologies, Franklin Computer, Vector Graphic. Who remembers these companies now?

And here we are again. I don't usually write about stocks anymore, but the parallels are eerie. As of last week, TheStreet.com's Internet stock index sat at 413, down from 1,154 on Dec. 31 1999.

In one month, from mid-March to mid-April, the index fell about 50%, from a high of 1,350. For some companies in the index, the carnage was terrifying: Amazon down to less than 20 from 113, Yahoo down to 34 from 240, and CMGI skulking at less than 10 from a high of 163.

In the *Infoworld* stock index I assembled so long ago, the same thing happened. Stock prices in companies such as Apple, Radio Shack, Seagate, Verbatim and dozens of long-gone PC clones hit highs in May 1983. Then, with the June quarter, Atari, Texas Instruments and Commodore all announced huge losses and write-offs from forays into the consumer market. Within a month, the index had dropped by half.

The lesson here is in what happened after that:

Those stocks never came back — well, not immediately. Apple, which had to lay off 20% of its workforce, took four years to get its stock back up to the 1983 high (and as of last week, its price had fallen back to that level). Commodore left the business. Seagate's stock didn't consistently beat its 1983 high for a decade.

In hindsight, the PC crash was clearly a matter of too many shaky companies getting sky-high IPO valuations, newfound investor enthusiasm for the market and a crop of Wall Street analysts who hadn't been through a high-tech meltdown. Sound familiar?

On the other hand, people kept buying computers, venture capitalists kept investing, and eventually, the IPO market returned, albeit at more reasonable valuations.

So, with the help of déjà vu, I can safely predict that the Internet stocks that have been so hammered this year won't roar back to their previous highs for many years.

If you were invested on Internet stocks were cresting — and I suspect many of you were — then you have at least a wait of several years for your portfolio to recover. If you weren't, you'll feel the effects in the job market — the dot-com wounded are already trekking back looking for their old jobs or something similar. You can no longer play the dot-com ace in salary negotiations with your employer. You can also expect some collateral damage among the companies that were selling into the dot-com community. Note Viant's announced layoff of 125 workers Dec. 7.

But, hey, it could be worse! In 1633, the government of Holland began letting average citizens invest in tulips, an exercise previously left to growers and experts. Speculation quickly bid the price of tulips up to where a rare bulb could cost as much as a house, which people frequently mortgaged to get in on the boom. In 1637, the market crashed, and more than 350 years later, the price of tulips has never returned to that high. ◗

READERS' LETTERS

The Geeks Speak

I HAVE A hearty giggle at Maryfran Johnson's column ["My Geek Central," News Opinion, Dec. 4]. It sounded suspiciously like my house, with three notable differences: My house is cabled with Cat 5 cable, we have a 56K frame-relay connection to the Internet and I'm the resident geek.

At last count, we had active four Win 9x-based desktops, three Win 9x-based laptops, one Unix-based computer and a router. On standby, we had one router and three low-end desktop PCs, which may very soon become active Linux boxes.

All I can say is that I love being a geek!

Karla Vejsi
Director of technical operations
Business Technology Center
West Chester, Pa.

I HAVE TO ASK Maryfran Johnson what she is doing with my husband. I didn't think he had time to manage a dual life, what with maintaining our wireless network, experimental Linux servers, personal mail server, audio workstations and all the rest of the paraphernalia of a geek haven combined with a home-based consulting business.

All those years we've been told that we were uniquely strange. Now we have proof that we are just run-of-the-mill geeks.

Whitney Quesenberry
User interface designer
Cognetics Corp.
Princeton Junction, N.J.
whitneyq@cognetics.com

Security Smoke Screen

T HE ACTION by the State Department is counterproductive in the effort to ensure that better security procedures are created and adhered to ["State Department to Punish Six Over Missing Laptop," News, Dec. 11].

The termination of the key senior manager is the typical Washington Teflon management style: If they terminate a senior federal employee, then Congress won't investigate, and no one at State will have to endure what Secretary of State Madeleine Albright or Barry Richardson had to endure recently. Can you say "smoke screen"?

Jack Anderson
Indianapolis

IT'S ridiculous to place any sensitive information on a portable device. Such information would have been just as accessible on a highly secure Web site and far more secure. If sensitive information must be placed on a laptop, then that device should contain a wireless electronic tag so it can be restricted by alarm to a particular part of the building.

C. Marc Wagner
Student Technology Centers
Indiana University
Bloomington

Sabbatical vs. Holiday

I T'S amusing that companies in the U.S. are starting to offer sabbaticals and making such a big deal about it ["Getting Serious About Sabbaticals," Business, Dec. 11]. In Europe, they're called holidays (vacations). Nearly all European companies give their employees four to six weeks of vacation time.

I grew up and worked most of my life in the U.K. before moving to the U.S. in 1987, and I still get fed up with the lack of vacation time here. I often hear that people in the U.S. work harder than in Europe, but do they work better? Many small businesses have proved that productivity drops rapidly as more hours are worked.

Maybe there's hope yet. As more firms offer sabbaticals, perhaps some enterprising human resources director will

migrate from sabbaticals to more vacation time.

Neil Hunter
Technical manager
Fred American Real Estate
Solutions
Anaheim Hills, Calif.
nhunter@firstam.com

Disturbing Ad

N ORMALLY, I'm fairly thick-skinned about this stuff, but I found the Maxspeed ad in the Dec. 4 issue disturbing.

Maybe I'm more sensitive now that I have a newborn, but babies, though they often cry, give to the point of tears only if they are extremely uncomfortable or scared. Who makes a baby cry to get a photo spread for an ad?

Gerald R. Gray
Internet application
development
Consumers Energy
Jackson, Mich.

DON TAPSCOTT

Giving a Lift to Micropayments

MANY SKEPTICS e-mailed me after last month's column [News Opinion, Nov. 20] to say people will never use micropayment systems to buy small chunks of online content such as news, music or videos.

This is wishful thinking. Free content subsidized through advertising is unsustainable.

I don't know of any newspaper, for example, that runs its Web site at a profit. And the one newspaper Web site that's almost profitable is a great example of the scale of business model innovation that's required in the digital economy.

But this is more than just a newspaper issue. A software system unveiled two weeks ago shows that almost any company that deals with the public could soon profit from online content sales.

DON TAPSCOTT is chairman of Digital 4Sight (www.digital4sight.com) and co-author of *Digital Capital.* Contact him at dtapscott@digital4sight.com

The site that's close to profitability is the online edition of *The Wall Street Journal.* More than 500,000 subscribers, myself included, pay $99 annually to read the full text online of the Journal's various editions around the world. The fee accounts for about half of WSJ.com's revenue. Advertising contributes the rest.

WSJ.com does much more than just the newspaper online. The site alerts me via e-mail of news about companies I'm interested in. It also tracks and analyzes my stock portfolio and provides detailed profiles of more than 22,000 companies.

The site aggressively makes its content available to me anytime, anywhere. I can access the content from my browser-equipped mobile phone or wireless personal digital assistant or even listen to an audio version of the news through my MP3 player. This century-old newspaper is reinventing its value proposition for the digital era.

WSJ.com is now my principal business information portal. If I want a *New York Times* or *USA Today* article from last year, I can find it through WSJ.com's publication library. WSJ.com has successfully positioned itself as an intermediary between me and 6,000 other publications, profiting from its competitors' content. My searches appear as one lump-sum charge on my credit card.

At the moment, WSJ.com aggregates these services. But wouldn't it be great if I could go to a totally unrelated site such as MP3.com, buy a copy of a song for 50 cents, and simply charge the cost back to my WSJ.com account?

A new company called Clickshare Service Corp. in Williamstown, Mass., has developed such a system, and the business model has great

potential. Clickshare's first customer is *The Sioux City Journal* in Sioux City, Iowa, which offers for purchase its archives and Knight Ridder/Tribune business news stories.

If you establish a free Clickshare account with the paper, you can go to any other Clickshare-enabled Web site, buy content and charge it to your *Sioux City Journal* account. It's added to the monthly subscription charge the *Journal* puts on your credit card.

But there's no reason your Clickshare account provider has to be a newspaper. You could surf the Web and charge back purchases to a Clickshare-participating bank, telecommunications firm, ISP, electric utility, credit card company or retailer.

Exxon, for example, could become a Clickshare provider, with customers adding their online purchases to their monthly Exxon statements.

By devising a system that can share the wealth so widely, many more companies could have a stake in seeing micropayments succeed. ▸

WILLIAM M. ULRICH

Taking Another Shot at BPR

BUSINESS PROCESS re-engineering (BPR), the hottest management trend of the 1990s, was aimed at streamlining and eliminating business processes to make companies more efficient. But BPR got a bad rap because it focused on layoffs and forced retirements to boost profits and stock values.

Today, e-business initiatives have made the need to streamline, integrate and automate processes even more pressing. But this time, we have an opportunity to do it right.

WILLIAM M. ULRICH is a management consultant and president of Tactical Strategy Group Inc. Contact him at www.systemtransformation.com

Companies are seeking ways to integrate redundant processes, eliminate unnecessary tasks and automate deployment of processes. The intent: Make tasks more efficient and less error-prone.

Two things differentiate BPR efforts of the past from today's process integration initiatives. The first is the motivation for process integration.

The second is the ability to deliver technological solutions that streamline processes and support new external e-business requirements.

The main motivator behind process integration is the need to function more efficiently within and beyond the enterprise. Consider a company that has spread its order-processing capabilities across redundant business units, processes and information systems. It could consolidate those capabilities into one center if management wants

to eliminate discrepancies that arise when different people use different approaches to serve the same customers. But unlike BPR efforts, process integration must consider interfaces with various third parties, such as customers, suppliers, business partners and even competitors.

The growth of the Internet requires that companies integrate processes that can extend to these third parties. Application service providers (ASP), supply chain consortia, e-marketplaces and other Web-based relationships offer such collaboration opportunities, but only if a company can manage all processes effectively, from procurement to billing and beyond.

For example, if your company repeatedly fails to process major orders received from an e-marketplace that you established with competitors, you could lose your position within that e-marketplace. The same is true if processes are too redundant or inefficient to support relationships with your ASPs, suppliers, partners or customers. Process integration is essential to these relationships, which are essential to your bottom line.

The second factor behind process integration is our ability to deliver solutions that extend to third parties. IT plays a key role here. Early BPR initiatives ignored intricate, interwoven pastures between technology, data and business processes and downplayed IT's role. To ensure the viability of process integration projects, IT must collaborate with business units and third parties to ensure that solutions deliver value and function both internally and in third-party environments.

IT can assist in identifying and documenting where manual processes interface with redundant information systems. For example, if IT knows that two business units access redundant order systems and databases, it can relay that information to those business units. IT can also develop a knowledge base to help track process redundancies across business units.

When business units begin integrating and streamlining processes, this knowledge base can help them find where processes can be integrated, eliminated or changed.

Web-based process automation tools allow business and IT analysts to create Internet front ends that allow users to trigger or authorize a manual or an automated process. For example, an outsourced sales team could post an order from the road, and an in-house manager could then authorize internally. These tools can also invoke redundant legacy systems through common interfaces as a way to integrate systems. The fact that these tools run on the Internet means that employees, business partners, ASPs and customers can trigger processes internally and remotely.

Business process integration and automation pick up where BPR left off. Extending process integration and automation solutions beyond the enterprise delivers the efficiency that management has been seeking for decades. And e-business is the prime motivator for you to pursue these solutions now. ▸

AT THESE
PRICES, *WHO'S*
THE PER*F*ECT
HOST?

DELL

PowerEdge
7450

MICHAEL COHN

Making Every Minute Count At the Office

TIME IS TIGHT. People are scarce. Turnover is still sky high. And even though you spend most of your day banging your head against a wall, management wants more. More work. More results. More blood from stones. And to deliver all that, you'll need to make

MICHAEL COHN lives in Atlanta and saves time by skipping trite things like chalkspeak.

your tired, demoralized, scanning-the-Sunday-job-section staff even more productive.

Don't despair. You can do more with less. You're leaving hours on the table. Did you know that 40% of office time is nonproductive? Even telecommuters waste 20% of each day, and that's not counting the time they spend watching Oprah.

How much time is slipping through your fingers? Just answer this simple questionnaire and identify the 10 to 15 hours of your work week that you're wasting — as for the other 70, you're on your own.

1. I spend at least four to six hours a week:
a. In productive meetings.
b. In nonproductive meetings.
c. In meetings that would be productive if that guy at the end of the table would shut up.

2. I spend three days per month:
a. Interviewing candidates I'd never want to work here.
b. Interviewing candidates whom we won't pay enough to work here.
c. Interviewing so I won't have to work here.
d. I would say my programming staff wastes the most time on:

a. Fixing bugs.
b. Re-fixing bugs.
c. Not fixing bugs — assuming no one's looking.
d. I use any spare time each week:
a. Trying to read anything about current trends and technologies.
b. Trying to read everything about current trends and technologies.
c. Trying to clean the mess off my desk, since I subscribe to everything about current trends and technologies.

5. If I had better desktop systems and bandwidth, I could more quickly and efficiently:
a. Do vital company research and create hard-hitting presentations.
b. Run complex, highly statistical applications.
c. Use ETrade.

6. What ticks me off the most is:

a. I get 60 e-mails a day.
b. I get 60 e-mails a day from people who copy me for no good reason.
c. I get 60 responses a day from people whom I copied for no good reason.

7. Useless time sheets, forecasts, status reports and request-for-funding forms consume:
a. One morning per week.
b. Not as much time as I spend complaining about them.
c. Not as much time as I spend procrastinating in dealing with them.

8. My problem with commuting is:
a. I lose at least three hours a day in rush hour.
b. I save hours each day thanks to my cell phone, but run up $200 monthly bills.
c. I save hours each day thanks to my cell phone, but sometimes run up the back of another car.
d. If I could just find five more minutes in a day, I'd use it to:

a. Screen vendor voice mails.
b. Delete vendor voice mails.
c. Delete vendors.

If you answered "c":

One to three times — You're tremendously inefficient, and will have to work this weekend.

Four to six times — You're tremendously efficient, but will still have to work this weekend.

Seven to nine times — It really doesn't matter if you're efficient or inefficient; you just blew 45 minutes taking this survey. ▸

BRUCE SCHNEIER

Technology Was Only Part of the Florida Problem

IN THE WAKE of the presidential election, pundits have called for more accurate voting and vote counting. To most people, this obviously means more technology. But before jumping to conclusions, let's look at the security and reliability issues surrounding voting technology.

Most of Florida's voting problems are a direct result of "translation" errors stemming from too much technology.

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The Palm Beach County system had several translation steps: voter to ballot to punch card to card reader to vote tabulator to centralized total. Some voters were confused by the layout of the "butterfly" ballot and mistakenly voted for someone else. Others didn't punch their ballots in such a way that the tabulating machines could read them.

Ballots were lost and not counted. Machines broke and counted votes improperly. Subtotals were lost and not counted in the final total.

Certainly, Florida's antiquated voting technology is partly to blame, but newer technology wouldn't magically make the problems go away. Technology could even make things worse by adding translation layers between the voters and vote counters and preventing recounts.

That last bit is my primary concern about computer voting: There's no paper ballot to fall back on. Computerized voting machines, whether they have keyboards and screens, or a touch-screen, ATM-like interface, have more potential for problems. You have to trust the computer to record and tabulate the votes properly and keep accurate records. You can't go back to the paper ballots and try to figure out what the voter wanted to do. And computers are fallible: some computer voting machines — even outside of Florida — failed mysteriously in this election.

Online voting schemes have even more potential for failure and abuse.

We know we can't protect the Internet from viruses and worms and that all operating systems are vulnerable to attack. What recourse is there if the voting system is hacked or simply gets overloaded and fails? There would be no means of recovery, no way to do a recount.

Imagine if someone hacked the vote in Florida; redoing the election would be the only possible solution. A secure Internet voting system is theoretically possible, but it would be the first secure networked application ever created in computing history.

There are other, less serious problems with online voting. First, the privacy of the voting booth can't be imitated online. Second, in any system where the voter isn't present, the ballot must be tagged in some unique way so that people know it comes from a registered voter who hasn't already voted. Remote authentication is something we haven't gotten right yet. These problems also exist in absentee ballots and mail-in elections. But because online systems have a central point to attack, the risks are greater.

The ideal voting system would minimize the number of translation steps and make those steps remaining as simple as possible. My suggestion is an ATM-style computer voting machine that also prints out a paper ballot. The voter checks the paper ballot for accuracy, then drops it into a sealed ballot box. The paper ballots are the "official" votes and can be used for recounts, while the computer provides a quick initial tally.

With a clearly designed computer interface, this would be easy to use. With good error-handling, it would help reduce overvoting and under-voting. It would rely on computer software, with all those associated risks, but the paper ballots would provide the ability to recount by hand if necessary.

Voting is inherently a trusty system. We can spend money to improve its accuracy, but we can never get perfection.

So from a statistician's point of view, the presidential election in Florida was a tie. ▸

READERS' LETTERS

When Virtually in France . . .

No one is making the French access a specific site ["Yahoo Told to Block Nazi Goods From French," *Computerworld*.com, Nov. 20]. It's the responsibility of each individual not to access offensive material.

I agree that a company based in a specific country must follow the rules of that country, but an international Web site based in Country A is in no way responsible for what the residents in Country F choose to access on the Web.

If I were the CEO of Yahoo, I'd tell the French courts to feel free to impose their rules on any company within their own borders. Then I'd simply ignore this illegal, unethical and unenforceable ruling.

Olan Knight
Senior programmer/analyst
The Maxim Group
Dallas

IF A COUNTRY is to be ruled by law, all doing business in that country must obey the law. If a business doesn't like a law, it can lobby to change it or discontinue doing business in that country.

I want to be governed by law, not by the whims of an individual or group. Any other type of government doesn't represent equality and freedom.

Ann Nourenth
Senior programmer/analyst
Lewisville, Texas

APPARENTLY, Pimm Fox has never worked for a multinational company ["News Analysis: Can French Law Be Imposed on an Internet Company?" *Computerworld*.com, Nov. 28].

Every country in the world, including the U.S., imposes their laws on any foreign-based company that does business within their borders. Yahoo has the obligation to attempt to block French users in order to comply with the order.

Ask foreign Web site operators how they feel about our rules concerning collecting information on children. U.S. magistrates could impose similar orders on them, and we'd feel justified in protecting

our children that way.

Yes, we have less restrictive laws when it comes to free speech. Yes, it would be nice if the entire world acted just like the U.S. did. But that's not the way the world works.

John E. Columbus
QA/software development project manager
New Hope, Minn.

PIMM FOX chides the French for their "childishness," but it seems to me to be rather childish, as well as naive and hypocritical, to claim that one's standards are better than anyone else's. Time has certainly proved most such claims to be a lot of hot air.

Earl Truss
Senior programmer/analyst
Plymouth, Minn.

YOU MIGHT see a similar reaction in the U.S. if, say, we were speaking about banning access to a Web site that promotes violence against women. You just need the right amount of population that is sensitive to an issue.

Nicolas Magory
Elk Grove Village, Ill.

Satellite Deal Will Be Great

THE IRIDIUM DEAL will be a winner for both sides! ["Iridium Signs $72 Million Contract With Defense Department," *Computerworld*.com, Dec. 7]. Think of all the rocket fuel that will be saved launching new satellites.

Select state, county and city government agencies should also consider signing up for the service, not to mention

critical emergency services. The cellular phone infrastructure can't match today many areas where emergency services are repaired.

Johnny MacRae King
Field engineer
Carolina Data Systems – West
Marion, N.C.

Some 'Micro' Corrections

I DON'T THINK Microstrategy is considered a data mining package ["MicroStrategy, Aether to Take Data Mining Wireless," Technology News, Dec. 7]. The core software is a ROLAP system.

And it's not exactly true that you had to be aiming at your computer to access your data; MSI, at least since Version 5. can be accessed via pagers, e-mail, fax, etc. by using the Broadcaster system. It is true that, using Broadcaster, you can't initiate new queries unless you're at your PC, but you

could receive a predefined report on a regular basis or if a certain metric went over a threshold, for example.

Bob Clark
Software engineer
Sprint Corp.
Overland Park, Kan.

Security Standard Available

FYI, IN reference to "Sizing Up Security Services" [Technology, Nov. 27]: International Standards Organization standard 27799 — "Information technology – Code of practice for information security management" (a.k.a. BS7799 and AS/NZS 4444) has been officially published and is accessible for purchase from www.iss.nl/c/cate/d3444i.html.

Dale Johnstone
Member ISO/IEC Committee JTC1/SC27 – Security Management Techniques
Hong Kong

Was Cyberterrorism Article Partisan or Simply a Warning?

A version of the following letter recently appeared on Computerworld.com. It elicited the response that follows it.

FOR YEARS, as an IT professional, I have enjoyed *Computerworld*. It combined business intelligence and analysis yet was also technically very sophisticated and catered to the technical crowd. On Nov. 13, however, I learned that you also mindlessly dabble in politics. I was baffled, surprised, disgusted and outraged by the article "U.S. May Face Net-based Holy War," by your reporter Dan Verton [Page One].

What kind of a sham are you trying to pull off as objective journalism? Where does Verton get information that these are "pro-Palestinian hacker groups, some of which have links to international terrorist Osama bin Laden and anti-U.S. terrorist organizations?"

Verton doesn't name one organization that has direct, confirmed links to bin Laden. Why do you equate a pro-Palestinian group automatically with a terrorist? Why don't you equate Israeli/Jewish hackers with terrorists also? Why don't you talk about and name Israeli hackers and computer technicians that are waging a cyberwar? Why is it always the Palestinians and

(thanks to the old guilt-by-association technique) Muslims guilty of hacks and anti-U.S. activities?

Your reporter even got the definition of *jihad* wrong. *Jihad* is an Arabic word with many meanings. What it literally means is "to struggle," struggling to be human, to do well, to overcome one's own

> ## Why do you equate a pro-Palestinian group automatically with a terrorist?

weaknesses, desires and temptations. Your reporter and the media in general automatically translate *jihad* into "holy war."

You make no factual documented statements and yet rely on a kind of guilt-by-association journalism. Your report lacks an appropriate context of the history of Palestinian/Israeli conflict and makes what I feel are unscrupulous and ir-

responsible generalizations about this whole affair. Your report never names any Israeli groups yet condemns the whole lot of Palestinians (men whom I, and many others, consider freedom fighters).

I used to admire *Computerworld* for its breadth and coverage. No more. If you are going to engage in something that is not your forte, then you should be fair and balanced, not partisan.

Meri Jan
Chicago

I WORKED in the Middle East for nearly nine years, until 1994. I had the opportunity to speak with people from many different Arab nations, including Saudis, Kuwaitis, Lebanese, Syrians, Egyptians and Palestinians. They often spoke of their hatred for the Jews. They are taught from a young age that Israelis are their enemies and are to be despised.

They also often voiced their displeasure over the pro-Israeli stance of the U.S. I tried to explain how the Jews managed to gain favor in the U.S. by working together with clear and concise goals, buying newspapers, radio stations, TV stations, etc. that allow them to use editorials to express their views. I explained that this took many years to achieve. I explained that if

they want the same, they have to do the same and not blow planes out of the sky, kill U.S. soldiers and kidnap Westerners. Doing this only lowers others' opinions of Arabs in general. Meri Jan is right that Muslims get lumped into that group as part of that stereotype. That is unfortunate, but it is reality. Knowing that this is reality means they have to work that much harder to put a better face on their people.

Arabs told me that the Palestinians had a right to take land from the Jews to set up their own state. I suggested that if all they were concerned about was giving the Palestinians a homeland, they could offer some of their vast land versus taking from Israel's relatively small landmass. Their response was an adamant no. When I asked why, the typical response was that the Palestinians are basically political rabble-rousers who would stir up trouble in their countries. When I asked why it was any different for Israel to be expected to give up its land, they didn't have an answer.

I enjoyed the article and took it for what was intended: to alert people to the dangers of inadequate security and the importance of continued improvement.

Bob Bonnette
Performance analyst
Chevy Chase, Md.

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BUSINESS

ONE BILL, PLEASE

Companies say they want combined bills for voice and data services, but it's hard to get a service to put them all together in a simplified form to read over the Web. Three users say they like QuantumShift's service, but some analysts say they worry that large companies won't trust one company to do it all. ▶ 42

ID GUARANTEE

A group of four major banks based in Europe and the U.S. said last week they've gone live with a system that will guarantee the identity of the players making large electronic payments on business-to-business exchanges. ▶ 42

TIME TO DELIVER

During the holiday season, delivery volume at UPS will grow from 13 million to 19 million packages a day. Jerry Skaggs, UPS's vice president of information services operations, assesses the impact on IT. ▶ 48

ONLY AS GOOD AS THEIR TOOLS

Yes, people and processes are important in a development project. But don't forget the value of good tools, writes Ed Yourdon. In today's environment, with projects facing aggressive deadlines, project teams must be allowed to choose their own tools, regardless of whether they conform to organizational standards, he says. ▶ 46

SPENDING SURVEY SAYS . . .

A *Computerworld* survey finds that most IT organizations will have more to spend next year. The top budget priorities? Business-to-business e-commerce tools, security and staffing lead the way. ▶ 48

GREAT EXPECTATIONS

Have entry-level IT workers been spoiled by tales of dot-com millionaires and candidate-hungry recruiters? Some have, for sure. But most have other concerns about their first job in IT. We asked several to share their career desires with us. ▶ 54

MATCHING UP

Peer group analysis is the practice of identifying business peers using factors such as industry, size, revenue and geographic location. Popular ways to conduct the analysis include the study of compensation packages and business practices such as financial performance, inventory control and marketing strategies. Find out more in QuickStudy. ▶ 55

ANSWERS READY

Computerworld Career adviser Fran Quittel tackles readers' questions about breaking into the biometrics field, taking a pay cut at a start-up and how a chief technology officer can demonstrate his business experience. ▶ 56

MENTORS MAKE A DIFFERENCE

ROLE MODELS FOR IT LEADERS don't have to come from the IT ranks. But whether they're technologists or not, there's no underestimating the value they can bring to an IT manager who has suddenly been given the top job. A role model or mentor can be a source of inspiration and can keep new CIOs focused on professional growth.

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We're an equal oppo...
knowledge provider. We d...
where your data comes f...

BUSINESS

Firms Turn to Third Parties to Get Handle on Telecom Bills

Web-based aggregation key for some

BY MATT HAMBLEN

Managing several types of communications services sold by dozens of voice and data providers can be confusing and costly for a business.

But some companies are trying to simplify things by working with third parties to aggregate the costs of local, long-distance, wireless and data services, compiling invoices across a range of providers and with Web-based tools used to dissect bills for auditing purposes.

"Before, telecom had been a bear to handle. Instead of using multiple vendors for telecom, we now have essentially one vendor and we have one bill," said Deborah Mings, chief financial officer at Sonoma, Calif.-based recruitment firm Gary D. Nelson Associates Inc.

The company uses QuantumShift Inc. in Novato, Calif., to handle most of its telecommunications procurement and billing.

QuantumShift has been Nelson Associates' service provider since this past January, finding deals on local and long-distance voice, frame relay, Internet and toll-free telephone services for the firm.

Mings said her company saves about 15% that way, but the savings aren't nearly as important as the efficiency of having one Web-based bill for QuantumShift. Before, "we used to get a bill nine inches thick" for local service, she said. Now, Nelson Associates is able to conduct audits that it couldn't take time to perform before, she added.

Another QuantumShift customer is $1.3 billion Del Monte Foods Co., which pays approximately $30,000 per month for long-distance interstate and intrastate services and is considering other types of services, said David Rosati, financial controller at the San Francisco-based food company.

Rosati estimated that Del Monte's savings is "much higher" than the 15% savings in service costs that QuantumShift says is average.

But, like Mings, Rosati said he believes the real benefit is in making Web-based bills more accessible.

"I found QuantumShift because I was trying to get our from under all the paper, since we had all these bills, bills, bills, and there was not a lot of focus on whether the bills were right or not," Rosati said.

QuantumShift officials said the company has about 100 clients, including Foster City, Calif.-based Branders.com, a Web distributor of promotional products.

Analysts said the value of a third party like QuantumShift is more apparent for a small business, which wouldn't have the resources to set up services, shop across dozens of vendors and then audit bills from many firms each month.

Jeanne Schaaf, an analyst at Forrester Research Inc. in Cambridge, Mass., said in a July report that she couldn't find any company besides Quan-

DEBORAH MINGS, chief financial officer at Gary D. Nelson Associates, says QuantumShift has helped consolidate her firm's telecom billing.

tumShift that provides fully automated provisioning and billing that's product-independent. However, she said, all the major carriers, such as Sprint Corp. and AT&T Corp., are moving billing to a single bill over the Web — something they've been trying to do for years. Yet all those carriers will be selling only their own products, not those of competitors.

"Every vendor wants to consolidate bills, because he who controls the billing controls the account," said Brownlee Thomas, an analyst at Giga Information Group Inc. in Cambridge, Mass.

Thomas said she doubts that a large company will ever want a service for all its communications from a firm like QuantumShift. "Most big businesses won't want to turn over control of a service to what is essentially a middleman," she said.

Elizabeth Ussher, an analyst at Meta Group Inc. in Stamford, Conn., said she agreed. "If I'm going through an aggregator and I have a problem with service, my contract is with the aggregator and not the primary provider," she said. ▶

World Bank Alliance Goes Live

Identity, payment system solidified

BY MARIA TROMBLY

A group of four major banks based in Europe and the U.S. said last week that they have gone live with a system that will guarantee the identity of the players making large electronic payments to business-to-business exchanges.

The technology, which uses smart cards to confirm identities, was developed by New York-based consortium Identrus LLC and provides a legal framework for large financial transactions.

Bank of America Corp. in Charlotte, N.C., and European financial institutions ABN AMRO Holding NV, Deutsche Bank AG and HypoVereinsbank AG are the first to deploy business-to-business payment applications based on the system developed by Identrus, which was formed last year by a group of eight banks. The

consortium now has more than 30 members, including The Chase Manhattan Corp. and Citigroup Inc.

Identrus spokeswoman Laura Rome said business customers of the participating banks are eligible to receive a digital certificate and a smart card. A customer would then use the smart card to log on to a Web-based system to make electronic payments to other companies that also have Identrus certificates, she said.

Identrus is a vendor-neutral consortium of financial institutions and, as such, is the closest thing the business world has to a global standard for securing large-scale electronic payments, said Avivah Litan, an analyst at Gartner Group Inc. in Stamford, Conn.

"You need a bank-owned consortium to pull [the development of such a standard] off," Litan said. However, she added, a recent Gartner survey showed that moving to digital certificates for processing business-to-business payments isn't

a high priority for most companies, with less than 1% of business-to-business transactions currently authenticated with digital certificates.

"User IDs and passwords work fine today," Litan said.

But Amsterdam-based ABN AMRO, for one, is already using smart-card technology for corporate customers using its proprietary Windows-based online banking systems.

Identrus will enable the bank to maximize the same level of security as it moves to an open, Web-based system, said Susan Skellma, senior vice president of global transaction services at ABN AMRO. ▶

SNAPSHOT

Holiday Rush

In the first installment of this holiday traffic measurement study, Jupiter Media Metrix Co. showed that unique visitors to online retail sites shot up 40.3% to 35.2 million in the first week of the shopping season compared with the same period last year.

Top 10 Retail Sites During Thanksgiving Week:

1	Amazon.com Books, music, general retail	**6**	Walmart.com Books, music, other, with customer incentives
2	MyPoints.com Customer rewards site	**7**	BestBuy.com General retail
3	AmericanGreetings.com Online greeting cards	**8**	Buy.com Books, electronics, general retail
4	BizRate.com General retail and site recommendations	**9**	Walmart.com General retail
5	NoE.com Books, music, general retail	**10**	Egreetings.com Online greeting cards

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WORKSTYLES

UPS: How Harried Can You Get For The Holidays?

Interviewee: Jerry Skaggs, vice president, information services operations.

Company: United Parcel Service of America Inc.

Location: Atlanta. IT headquarters in Mahwah, N.J.

Tenure: 30 years; worked in IT since 1992

Number of IT employees: 5,000 across nine locations.

Number of employees (end users): 360,000 internally, plus more than 100,000 customers who use UPS shipping software.

What impact do the holidays have on IT? "Delivery volume will grow from 13 million packages per day to 19 million. We expect our online CICS transactions will increase from 350 million per week to over 500 million per week. Three involve about 35% for all the data we have in IT.

"Starting around Thanksgiving, we have 2.5 million online package tracking requests per day, and that will go to over 7 million a day as we get closer to Christmas. The data for that is supplied by two different mainframe systems in two data centers, all in a matter of milliseconds.

"With that much volume, we can't have any downtime - not even scheduled downtime. We make sure we have 100% uptime 24/7 for every application that we run, from the Internet to the mainframe. Normally, we might make about 500 changes [such as upgrades and additions] worldwide each weekend, but we keep those as low as we can during peak season. We freeze our infrastructure.

"Also, since it's our busiest time of year we send IT workers out on the trucks as helpers. It's good for them to go out and experience what we're really all about. That direct experience with the core business is part of our legacy and our culture."

When do preparations for the holidays begin? "We start planning in April, and plans are in place by June. We make projections on volume from historical data plus new growth. Be-

tween June and Nov. 1 we scale up the physical environment and make whatever functionality changes we need."

Major initiatives for next year: A funds-transfer application for UPS Capital Corp. that will enable UPS customers "to obtain [payment for goods] as soon as a package is shipped, even giving as far as buying customers' accounts receivables."

IT training for next year: Web-based development on Java and tools.

Bonus programs: An incentive program for managers through which they may be recommended for stock awards given each December, managers receive year-end bonuses at one half of their monthly salaries, no IT specific bonuses.

Career path options: "We like to give supervisors and managers a well-rounded background and exposure in many areas. You may be in operations today and systems programming another."

Workday: About nine hours, usually from 8 a.m. to 5:30 or 8 p.m.

Most people carry beepers or cell phones? Yes, both.

Is there an on-site gym? No, but showers are available. UPS subsidizes local health club memberships based on usage.

On-site amenities: A banking facility, dry cleaning, shoe repair and take-out food preparation.

In-house cafeteria/food service: Yes.

Is it any good? "Don't ask me that question."

Holiday activities: An on-site luncheon for IT, a dinner for the night staff. Every employee receives a holiday turkey.

"We had 110 volunteers feed 139 families for Thanksgiving. We're involved in a lot of charity work, from United Way activities to monitoring school kids."

Quote: "The UPS people are very dedicated and committed to servicing customers. We're like a huge customer service machine here."

— *Leslie Goff*
(lgoff@ix.netcom.com)

What It's Like To Work at...

ED YOURDON

The Value of Tools

EVERY IT MANAGER knows that a successful development project relies on good people and good processes. But there's a third prerequisite for success: good tools. As the old saying goes, if your only tool is a hammer, all your problems look like nails.

In today's environment, with death-march projects facing aggressive deadlines, project teams must be allowed to choose their own tools, regardless of whether they conform to organizational standards. After all, the standards may endorse tools that are too slow, too hard to learn or poorly suited to the nature of the system being built. And the political reality is that project managers may have their wrists slapped for using unapproved tools, but they'll be fired if they don't deliver a working system on time. This recommendation can certainly create some long-term problems. But unfortunately, the reward system in most IT organizations today is heavily weighted toward the short term instead of the long term.

While it may be important to select nonstandard tools, it's important to agree on common tools within the project; otherwise, chaos will occur. This implies the selection of a minimal set of tools that everyone will use, which usually includes tools for e-mail and groupware, prototyping/rapid application development (RAD), configuration management and version control, testing and debugging, and project management. Depending on the team's sophistication, it might also include requirements management tools, computer-aided software engineering tools to support analysis and design, and libraries of reusable components.

Project managers will have their own opinions about which of these categories are most important, but I believe that e-mail and groupware tools are at the top of the list. If a development team's members can't communicate, coordinate and collaborate electronically, they can be effective only while they're in the same geographical space. Everyone has some form of e-mail today, but not everyone has access to e-mail at home, and not everyone has a laptop for communicating while traveling. The team may also need tools to support "threaded" e-mail discussions, in addition to groupware tools to support collaboration.

Just as every IT organization has e-mail, it's also true that it has a collection of prototyping and RAD tools. So the only significant question is whether the team is going to choose new tools of its own. Similarly, every organization has a project management tool, and it's likely to be Microsoft Project. Thus, the only question is whether the project manager feels the need for more sophisticated features provided by many other vendors. On the other hand, it's surprising to see how many IT organizations don't have configuration management or version-control tools. On a high-pressure project where people are likely to be working around the clock, it's crucial to have a tool-enforced mechanism to maintain control over all changes and updates. Similarly, I'm constantly surprised by how few IT organizations have automated testing tools, particularly to provide support for load testing of client/server and Internet-based systems.

It's sometimes tempting for the project manager to grab new tools as a silver bullet, hoping to achieve higher levels of productivity than would otherwise be possible. Unfortunately, this strategy usually ignores both the team members' learning curve and political debates within the team about the tool's effectiveness. Even worse, the tools that sound the most exciting can turn out to be so new that they don't even work properly. As a result, a new tool can prove to be the straw that breaks the camel's back — that is, a project that was already facing a number of problems collapses under the weight of new, untried, unfamiliar tools.

> *A new tool can prove to be the straw that breaks the camel's back.*

Bottom line: Choose a minimal set of solid, proven tools that the project team believes in. Avoid newfangled tools that exist only as beta releases, but don't feel constrained to use old-fashioned tools just to appease the Tool Police within your IT organization. ❚

Yourdon is editor of Cutter IT Journal, *published by Cutter Consortium in Arlington, Mass. Contact him at www.yourdon.com.*

PAYING FOR IT 2001

A *Computerworld* survey finds that most IT organizations will have more to spend next year. The top budget priorities: B2B, security and staffing. By Steve Ulfelder

O N YOUR FEET, people. We're going to do a little O'Jays here. Sing it with me: *Money money money. Money! Computerworld* recently interviewed 100 IT managers at organizations with at least 400 employees. The subject: money.

Some people got to have it (yeah, yeah). Some people really need it. (Haw. Listen to me y'all.)

We asked about IT budgets in the coming year. For the most part, IT leaders will have more to spend: 59% of the respondents said their budgets will increase next year. The average increase for those who expect to see a budget boost is 10%.

Only 9% said their budgets will decrease next year, while 29% said they don't foresee any changes.

You wanna do things, do things, do things, GOOD things with it.

Indeed. But what good things?

Here's what we found out.

With no end in sight for the IT labor crunch, it's at least a mild surprise that while 37% of the respondents said their budgets for new hires will increase, 45% said they expect their recruiting budgets to hold steady.

Kurt Potter, a research director at Stamford, Conn.-based Gartner Group Inc., says recruiting eats up a whopping 52.8% of the IT budget at a typical company. Training expenditures, too, are expected to rise: 46% of respondents said they'll spend more on training — the biggest percentage increase among a list of budget items presented in the survey.

With privacy and security also chief concerns, many IT managers anticipate spending more on security: 29% said their budgets for security projects will increase 10%, on average. If there's a surprise there, it's that more IT organizations didn't foresee a budget boost. Analysts say security and data privacy are top-level issues for IT. Yet they speculate that much of the additional money spent on security is covered in other areas cited in the survey, including software applications, which have strong security folded into them, as well as consulting expenditures.

Staff dedicated to security, consumer-focused e-commerce, data warehousing, data center management and wireless technology should stay constant next year, the survey showed. Meanwhile, business-to-business e-commerce and intranets will likely eat up more resources.

So, what are the do-or-die items for IT? When asked which two projects will be most critical during the next 12 months, business-to-business e-commerce came out on top, chosen by 29% of respondents.

Gartner figures show that e-business is consuming 12.7% of IT budgets this year, and that number is expected to rise to 15.5% next year. Moreover, "we think that number is understated," Potter says, because managers tend to "be in denial for a year or two" when a major new expenditure, such as e-commerce, affects their budgets. Potter says most of the IT budget increases during the next several years will be attributable to e-commerce.

Would it be prudent, then, for IT leaders to reexamine their e-commerce budgets

BUSINESS

and perhaps revise them upward? Both Potter and Bob Kraus, an analyst at Boston-based AMR Research Inc., say it would.

E-business is driving much of the increased spending for next year. Paula Hinchliffe, a network administrator at Seal Master Corp., a manufacturer of rubber products in Kent, Ohio, is one IT manager who plans to staff up — in her case, because Seal Master is beefing up its Web presence.

She says Seal Master's decision to increase its Internet footprint means "we've got inside people designing graphics, outside people working with the servers, and a guy focused on the network and security."

Web Hype?

But not all IT leaders are plowing money into e-business. Greg Walton, vice president and CIO at Roanoke, Va.-based Carilion Health System, says that in his industry, "there's a lot of hype around the Web. The smart companies will adopt the Internet with ri-

fle shots, not shotgun blasts." For this reason, Carilion's increased spending on e-business will be incremental rather than dramatic next year, Walton adds. "We're not going to turn our budget inside out for it," he says.

A large pack of choices follows business-to-business e-commerce on respondents' lists of their two most critical projects: Security, intranets, enterprise resource planning (ERP) and data center management were each cited by about 18% or 19% of respondents.

Yes, ERP. Though 36 major vendors have had a rough 18 months and ERP tools are increasingly diffused and fragmented among customer relationship management and e-business software, "ERP is far from dead," says Kraus. North American companies this year will have spent 32% of their application budgets (not to be confused with the broader IT budget) on ERP, according to AMR. The research firm adds that e-commerce applications are moving up fast, consuming 23% of application budgets.

To many experts and IT leaders, one area that appears ready to absorb a larger share of IT budgets is wireless technology. 40% of survey respondents said their budgets for wireless will increase an average of 10%, with an average projected increase of 3% for all 100 people surveyed. It's important to note, however, that most businesses spend relatively little today on the merging field of wireless, so a 10% increase is unlikely to represent an enormous dollar-figure increase.

Moreover, even most who are bullish on wireless say it won't truly make its presence felt next year. "We've been playing with [wireless] for over two years," says Stephen Smothers, CIO at Medical Center Enterprise in Enterprise, Ala.

The health care firm is evaluating Compaq Computer Corp.'s iPaq as well as other devices as case management tools — replacements for pens, paper and clipboards, to better serve patients. However, although Smothers says the firm is "going to be doing a lot of wireless in the next 36 months," he adds that he doesn't foresee a major budget increase next year.

Charles Shepherd, group vice president of systems management at the Atlanta-based Arthritis Foundation, says he agrees. Wireless "won't really have an impact this fiscal year," he says. "But we're keeping an eye on it for the future."

Walton says that while his company will see "a large percentage increase" in wireless spending (he declines to say exactly how large), the figure is a reflection of how little Carilion has spent in that area to date.

The predicted multiyear ramp-up jibes with findings from Gartner Group. According to Potter, "Wireless may be the next big thing." Wireless now accounts for less than 3% of IT budgets in the U.S., but Gartner sees that percentage rising to 15% in 2005.

"Wireless spending is [now] under the radar because it's in the lines of business," Potter says. "It has to be sold to IT organizations."

No Major ASPirations

For more than a year now, there has been much discussion in the press about application service providers (ASP). But ASPs appear to be catching on rather slowly; only 27% of respondents in the Computerworld survey said their budgets for ASPs will increase — by 10%, on average.

This anticipated forecast consolidation creates uncertainty among larger corporations in particular, Potter says. "ASPs' target right now are small and midsize companies," he says. "Right now, they won't be finding their money from larger companies."

Q: Will your IT budget for next year increase, decrease or remain the same, compared with this year's?

Increase: **59%**

The same: **29%**

3%
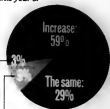
Decrease

Don't know/didn't answer

FACT: The average increase is **10%** among those who said their budgets would increase.

PAYING FOR IT 2001

Potter adds that Gartner foresees ASPs making major headway in large organizations as part of the "virtual enterprise," but that's five years off.

The Arthritis Foundation reflects many organizations' ambivalence regarding ASPs. It will be "looking more at leasing options" during the next year, Shepherd says. Initially, he says, he will consider adopting the ASP model for the help desk. The success or failure of that project will determine whether the foundation moves bedrock IT such as customer relationship management and ERP to an ASP.

"We've looked at a number of [requests for proposals from ASPs] over the past nine months," Shepherd says. Their potential appeal, he says, is "the bottom line, and also to make sure we're flexible." A recent study by Zona Research Inc. in Redwood City, Calif., found that reducing total cost of ownership for a particular application was the top reason cited by IT executives for using ASPs.

But the Arthritis Foundation is still feeling out ASPs and is by no means committed to them. Analysts say this is common, and they don't expect a significant change next year. They cite uncertainty about the future of ASPs as one major reason.

> **"**
> Wireless spending is [now] under the radar because it's in the lines of business. It has to be sold to IT organizations.
>
> KURT POTTER, RESEARCH DIRECTOR, GARTNER GROUP

"There are about 600 ASPs out there now," says Potter. "In eight years, you're going to see about six."

IT managers appear to be hesitant to form a crucial partnership with an ASP that may not last. Today's investment environment, in which both consumer-focused dot-coms and business-to-business start-ups have seen a precipitous slowdown in investment capital, may add to this reluctance.

Other Findings

The *Computerworld* survey results revealed several other key trends:

■ Only 3% of respondents said they expect to spend more on consultants and contract labor, while 24% said they expect to spend less in that area; 5% said they'll spend about the same amount. Analysts attribute the slowdown to a relatively stable technology period, with most IT organizations planning few changes in major applications and operating systems.

■ Data center management, too, is seen as constant, as 3% of IT workers. An interesting increase is in intranets: Next year, respondents said, the intranet will be tended by 10% of the staff, up from 6% this year.

■ Services are expected to increase — 27% said their budgets will increase an average of 10%.

■ Knowledge management was deemed critical by only 2% of respondents.

So, while money may be important in keeping up with the Joneses in today's information-driven economy, companies and IT managers are following one refrain from that 1970s hit by the O'Jays:

Don't let money rule you!

Ulfelder is a freelance writer in Southboro, Mass. Contact him at sulfelder@charter.net.

By the Numbers

What IT managers told Computerworld about their companies' IT spending plans for next year.

Projected average increases for selected areas of IT budgets:

Software and hardware	3%
New hires	.75%
IT training	3%
Wireless technology	3%
Services	1.3%

Q. Which two projects are most critical for your organization during the next 12 months?

B2B e-commerce	29%
Security	10%
Intranets	10%
ERP	10%
Data center management	10%
Knowledge management	10%
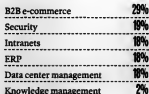
Q. What has been the effect of rising IT salaries on your overall IT budget this year?

None	46%
Increase in IT budget	30%
Turnover/loss of personnel	7%
Workload distributed among fewer staffers	6%
Difficulty hiring qualified personnel	6%
Increased labor/operating costs	4%
More contractors	6%
Other	5%
Don't know/didn't answer	7%
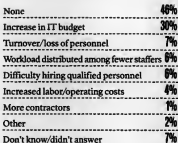
Q. Do you feel that business units' influence in IT decision-making has increased, decreased or remained the same in the past 12 months?

Increased: 68%
The same: 28%
Decreased: 3%
Don't know/didn't answer: 1%

SAKS

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IN SAVINGS.

WANTED: CIO Role Models

By Melissa Solomon

ELIZABETH Shuttleworth says she has a hard time believing how far she's come in the past two and a half years. One day, she was the director of business systems at Campbell Soup Co., and the next, she was the CIO at a brand-new $1.5 billion company with no infrastructure — what Shuttleworth and her colleagues referred to as "a rather large baby."

That "rather large baby" is Cherry Hill, N.J.-based Vlasic Foods International Inc. Vlasic originally consisted of nine businesses within Campbell, spread throughout four divisions across five countries.

But in 1998, Campbell Soup decided it didn't want Vlasic anymore. And when Vlasic split off to form its own company, Shuttleworth was named CIO. She found herself with a bare-bones staff and an unworkable infrastructure that needed to be ripped out and rebuilt from scratch.

Operating under what seemed like an impossible mission, Shuttleworth forged ahead, praying that she was making the right decisions as she went along. "I didn't have time to get advice from others," she says. "It was like 20 decisions a day. It was terrifying. But it was fun."

It's a situation that's not unfamiliar to many CIOs. As technology plays a larger role in business, the stakes are higher than ever. And at the same time, technology is changing so fast that it's almost impossible for CIOs to slow down and devise a clear mission.

But it's critical that CIOs do slow down, says Anne Pasley-Stuart, president of Pasley-Stuart HR Consultants in Boise, Idaho. They need to find a source of inspiration: a role model or mentor to help keep them focused on their professional growth.

"It's too easy to sit in the office and get hunkered down," says Pasley-Stuart. "Because CIOs are under siege a lot, they can kind of hide. But that's the worst thing they can do."

"I don't think we ever reach a point in our lives where we don't look at other people for motivation, inspiration, whatever it may be," Pasley-Stuart says. "We need someone to bounce ideas off of, we need someone to give us that pat on the back or the kick in the fanny that we need."

But where do CIOs find such inspiration? Shuttleworth found hers in an unlikely candidate: someone who could easily have been a competitor rather than a supporter. One of the first people she met at Campbell was Jerry Page, the now-retired director of international MIS at the Camden, N.J.-based company. When she described her job, they realized that they had several overlapping responsibilities.

"It was actually a strange meeting,"

Shuttleworth recalls. "He could have annihilated me. But he became a friend. . . . He's my sounding board. And he will always put things logically, step by step. I think he manages his whole life like that."

Making the Rounds

Like Shuttleworth, Jeffrey Spar found himself in a brand-new position with a major mission confronting him.

Two years ago, Spar left his career as a technology consultant at McKinsey & Co. in New York to become vice president and CIO at The Reader's Digest Association Inc. in Pleasantville, N.Y. One of his initial goals was to build a common IT infrastructure across the organization.

Rather than go it alone, Spar called Joseph W. Farrelly, CIO at Joseph E. Seagram & Sons Inc., a subsidiary of New York-based distillery and entertainment giant The Seagram Co.

Spar met Farrelly when he was consulting at Nabisco Holdings Corp. and Farrelly was the CIO there. Spar says he felt that Farrelly did an excellent job heading up a standardization project at Parsippany, N.J.-based Nabisco, so he

called him for advice. "He's sort of this silver-haired, as you would think of a CIO — very posh, always knows where to go, what to do," Spar says of Farrelly. "He's always watching out for me."

Farrelly offered Spar advice on his project and showed him around the executive IT circuit. He sponsored Spar for a membership in The Research Board Inc., a New York-based professional network for IT leaders, and introduced him to other CIOs.

Another role model Spar picked up during his consulting days is IT guru Charlie Feld of The Feld Group in Irving, Texas. The Feld Group sends CIOs into companies for short-term stints to help turn around ailing IT departments or projects.

"I spent a lot of time with him while I was consulting," recalls Spar. "We used to always call Charlie up and say, 'We're working on this project, here's what's broken, what do you think?'"

Contacts like Feld and Farrelly are extremely important because you can run plans by them without consequence, says Spar. "They represent the ability to easily and safely present ideas . . . before going to talk to the board or the CEO about making a big shift," he says.

Shuttleworth says she's also found great value in networking with other CIOs. At a meeting of the Washington Working Council of Chief Information Officers, she met the vice president of IT for Pittsburgh-based H.J. Heinz Co., and shared her story.

"It was great to talk to him, because some of the time, you're making pretty big decisions and choosing to take a certain course. It's always nice to find confirmation from someone," she says. "I realized I am managing to keep up.

> I think you need diversity and you need people who think differently.
>
> **ELIZABETH SHUTTLEWORTH, CIO, VLASIC FOODS INTERNATIONAL**

But there's a real fear because there's so much out there."

Joining the Council of CIOs not only helped Shuttleworth realize that she's keeping up, it gave her pride in the accomplishment of building Vlasic's infrastructure because she saw how impressed her peers were.

"That's kind of nice because I don't think [Vlasic's directors] realized what it was," Shuttleworth says. "Unless you work in the industry, you really don't quite understand."

Diverse Views

Just as Shuttleworth finds value in networking with fellow CIOs, she says it's equally important to have people from different backgrounds to draw on for inspiration. She once joined an organization for women business leaders, but found it lacked a diversity of views.

As a woman from South Africa, Shuttleworth says she's interested in hearing what men have to say and what Americans think. "I think you need diversity and you need people who think differently," she says. "Homogeneity is never pure for me."

Shuttleworth also counts her boss, Vlasic CEO Bob Bernstock, and some of the people who report to her as role models.

Dave Storm, vice president of planning and information services at Harley-Davidson Inc. in Milwaukee, says he too has found inspiration from a variety of sources. But unlike Shuttleworth and Spar, it hasn't come from fellow IT leaders.

"I'm not enamored by CIOs," Storm says. "I would not take the title myself. The half-life's about three-and-a-half years." The problem, he says, is that CIOs are too often hired based on the expectation that they'll be a silver bullet — they'll have all the business and technology skills needed to whip the company into shape. That's not realistic, says Storm. Successful IT leaders should be able to set up a team and provide the leadership and motivation to move a company forward.

One role model who comes to mind for Storm is Mike Noling, the manager who hired him when he worked at Chicago-based Andersen Consulting. "He was very classy," says Storm. "He handled his professional and personal life well, he did a lot of things in the community. I think he was worthy of emulating."

Storm, who fought a battle with cancer 17 years ago, says he also looks up to world-class cyclist Lance Armstrong.

"I think the fact that Lance Armstrong had cancer and came back to do what he did is just a great stop," Storm says. "I think the willpower, perseverance that that kind of thing takes is worthy of accolade for anybody that does that." ▶

Great Expectations

Have entry-level IT workers been spoiled by tales of dot-com millionaires and candidate-hungry recruiters? Some have for sure. But most recent graduates have other concerns about their first jobs in IT. We asked several to tell us their career desires. By Holly Hubbard Preston

WHEN BRIDGET HELLYER graduated from college a few months ago, she expected to be embraced by a needy, enthusiastic job market filled with established software firms looking for new talent. Instead, she faced grueling two-day interviews with demanding prospective managers who extended few offers and not much encouragement.

After four months, Hellyer says, she finally landed a "great" application programming job with a start-up that gave her everything she wanted. Still, she acknowledges that the whole experience of getting to that point was a far cry from her original expectations.

"I was a little surprised how competitive the market was and how bureaucratic some of the big software companies were," Hellyer says.

Hellyer isn't alone in her great expectations and subsequent reality check. Earlier this year, Computerworld spoke with 41 soon-to-be college graduates about what they expected from their first IT jobs and long-term IT careers.

On the whole, they were an optimistic bunch, anticipating signing bonuses, lush salaries and promotions within the first six to nine months.

Then we followed up with some of those graduates four months later to find out if they had settled into new jobs and how they matched their expectations. The consensus among those we spoke with was that the booming IT employment sector may look like a land of milk, honey and stock options, but for the entry-level professional, the reality may be more like bread and water.

Be Prepared

Although demand for programming and Web talent these days is unprecedented, when it comes to first-time hires, the traditional rules still apply: Entry-level salaries are generally modest, you'll need to pay a lot of dues before a promotion comes, and you may be asked to take on tasks not originally identified in your job description.

This is what another respondent, John, found when he landed his first job. "My initial expectations were that I would be working strictly in a programmer role," he said. "But I currently have to deal with network administration functions as well as working as a programmer."

In fact, John says, network administration takes up most of his time. Originally, he had been told he might be used as a backup network administrator.

Another respondent, Toyin, says she had a similar experience. "I sent out tons of résumés and had very few responses." Ultimately, Toyin landed the job she wanted as a data analyst in the health care field. Still, she says, the pay was much less than she expected. "I

had seen so many figures in the press that led me to expect more," she says.

Even in cases where respondents had industry experience, it wasn't always enough to land them the positions they wanted.

Such was the case with Thomas, who's still looking for a job.

Going into his job hunt, Thomas says, he believed he had a lot of hands-on experience — until he started interviewing. Four months and 35 résumé submissions later, he's still looking.

Thomas says he's interested in starting out in network/PC support or administration. In addition to a bachelor of science in computer science, he has taken 36 computer classes, holds an A+ certification, is working toward a Cisco Networking Academy CCNA certificate and has owned his own business. And he volunteers as an Internal

Revenue Service-certified income tax preparer for the elderly. His reception from the job market so far? "You don't have any experience."

Tom, an aspiring programmer just out of school, offers this advice to employers frustrated by the perceived lack of experience among college graduates like himself: Be more specific with the universities and at job fairs about what you want, down to the level of certifications and programming skills.

Facing Reality

To managers responsible for IT hiring, the comments here offer a chance to peak inside the minds of some of the folks that may soon be applying to you for a job. Are you on the same page with these people? It isn't easy.

"Fresh grads, especially coming into start-ups, often tend to think they will be a senior engineer, lead developer or even architect within their first year," says Jeff Kennedy, a software development manager at Tellme Networks Inc. in Mountain View, Calif., who handles a lot of hiring for the start-up. "It used to be, back in the old days, that new hires would have titles such as junior programmer analyst, but now fresh grads would find an offer with such a job title to be an insult."

Kennedy has a point. In fact, when our interviewees were still in school, we asked them how soon they expected to be promoted after their initial hiring. The majority said they expected to advance within six months of hiring. What were they thinking? As one of our respondents noted in a follow-up interview, "I had read so much about the demand for programmers and how people were writing their own tickets."

While that might well be the perception among grads, the reality is quite different, says Bret Miller, president of PruHs Executive Innovations, an IT placement consulting firm in Avon, Ind. According to Miller, most organizations in the deals with "do not even know if a person is solid for the long term until their first 90 days minimally. General rule of thumb for top talent to receive a promotion is 12 to 18 months." A pay raise, he says, might come in 12 months.

While our college graduates may have overestimated their opportunity for early promotion, we found that most were fairly realistic.

Although much has been written about senior programmers demanding at-home work situations, more than 90% of our respondents said they expected to work in a traditional office environment. Instead, the perks the graduates most frequently identified as appealing were salary, training, good geographic location, signing bonus and atmosphere.

Hubbard Preston is a freelance writer in St. Helens, Calif.

C. Claytoon

BUSINESS QUICKSTUDY
FINANCIAL & BUSINESS CONCEPTS IN BRIEF

Peer Group Analysis

DEFINITION

Peer group analysis is the practice of identifying business peers using factors such as industry, size, revenue and geographical location. Popular analyses include the study of compensation packages and business practices such as financial performance, inventory control and marketing strategies.

BY MARY K. PRATT

WHEN AMY Glynn founded the Womens Executive Network last year, she encountered a common challenge facing most executives these days: attracting qualified workers.

The right compensation package would be key to luring skilled employees to her Boston start-up, Glynn says. But like any CEO, Glynn knew she couldn't be overly generous. She had to make competitive offers that were in line with what other companies were tendering.

"You could give away the farm if you don't know what you're doing," says Glynn.

Glynn and her chief operating officer, Beth Fehmel, used data collected from other start-ups that were similar in size and geographic location to determine how much they should offer prospective employees in their Boston, New York, Los Angeles and San Francisco offices.

Glynn and Fehmel used what is referred to as peer group analysis, a vague term that has been circulating for several years.

Scoping Out the Competition

Companies most commonly use peer group analysis to evaluate compensation plans at other organizations and make sure theirs are competitive — an important strategy considering today's tight labor market.

Companies identify their peers using factors such as industry, number of employees and geographic location, and then study the practices of those peers to make sure their own pay is up to snuff.

"Peer group analysis is part of establishing a compensation strategy," says Sandra L. Gaffin, a partner in the Miami office of Arthur Andersen LLP. "What you're saying is, this is how you want to position yourself in the labor market."

While peer group analysis is primarily used to evaluate compensation, the application isn't limited to pay. Companies employ the practice to analyze everything from financial performance to inventory control and marketing strategies.

A key step in making those informed decisions is to find appropriate peers.

Companies start by identifying others in their industry, Gaffin says. For example, high-tech firms compare themselves with other high-tech firms, retailers with other retailers, biotechnology companies with other biotechnology companies and so on.

Companies might then limit their peers to those with a similar number of employees and similar revenue or market capitalization in the same region.

When comparing compensation for a position such as CEO, for example, companies try to focus on peers whose CEOs have similar responsibilities, Gaffin adds.

Gaffin says companies today go even further when identifying and comparing themselves to peers — an approach that helps set peer group analysis apart from benchmarking.

For example, some firms consider financial or productivity performance when identifying peers. Gaffin says she knows of one service firm that will compare itself only to industry rivals that are considered among the top 100 places to work.

Bill Coleman, vice president of compensation at Wellesley, Mass.-based Salary.com Inc., says companies might also consider market share, earnings per share or revenue growth as potential criteria.

"Peer group analysis goes a step further [than benchmarking] and looks at who is in this group and what kind of performance they have," says Coleman. "It's qualifying the data before you aggregate it."

Eighty-seven percent of organizations determine their compensation by comparing themselves to competitors within the same industry, according to the 1999 Strategic Compensation Survey, compiled by the Alexandria, Va.-based Society for Human Resource Management (SHRM) and Arthur Andersen (see chart). However, only 8% of the respondents used performance criteria such as revenue growth to identify their peers.

Companies often change criteria for determining their peers depending on their needs. A high-tech firm might list only other high-tech firms as peers when analyzing a compensation package for its CEO but evaluate companies of similar size in the same region but in different industries when determining what to offer a systems analyst or a receptionist.

Peer Practices

Companies can gather peer data from consulting firms, government agencies and professional organizations, all of which regularly survey businesses and then publish their responses.

When analyzing what their peers are paying, companies consider everything in the compensation package — actual pay, bonuses, incentives and even quality-of-life factors such as flexible schedules — to make sure that their offers stack up.

Although analyzing peer data might seem like a cumbersome endeavor, industry giants aren't the only ones doing it. Smaller companies are using the practice and finding the analysis just as crucial to their financial well-being.

Glynn says one executive candidate wanted a 15% stake in the Womens Executive Network as part of his compensation. Armed with what similar start-ups offered to other executives at the same level, Glynn knew the demand was way out of line — and saved herself from making a bad hire.

"The benefit [of peer group analysis] is economics. If you use the wrong peer group, then you end up paying too much or too little," says Amy Jantz, knowledge manager at Scottsdale, Ariz.-based WorldatWork,

> ❝ What you're saying is, this is how you want to position yourself in the labor market.
> **SANDRA L. GAFFIN, PARTNER, ARTHUR ANDERSEN**

formerly called the American Compensation Association.

Despite its economic value, peer group analysis can have drawbacks.

"A disadvantage is that all it does is make you a player in your market," says Matthew Johnson, vice president of readiness at Westboro, Mass.-based Akibia Inc., a technology service provider. "It doesn't serve to differentiate you."
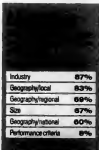
Just a Player

There's also a risk that companies that study their peers' pay structure and business practices will simply copy or emulate what their competitors are doing.

But Johnson says companies can reduce the risk of "just being a player" by using peer group analysis "to be better than everyone else."

"I think in New Economy thinking, it has to be more than just exceeding everyone," he says. "You have to come up with a new idea." ❚

Pratt is a freelance writer in Arlington, Mass. Contact her at markmary@mindspring.com.

Industry	87%
Geographical	83%
Geographic/regional	69%
Size	67%
Geographic/national	60%
Performance criteria	8%

SOURCE: 1999 STRATEGIC COMPENSATION SURVEY COMPILED BY THE SOCIETY FOR HUMAN RESOURCE MANAGEMENT IN ALEXANDRIA, VA. AND ARTHUR ANDERSEN IN CHICAGO

Dear Career Adviser:

I work on firewalls and security for a Fortune 1,000 company. I've been reading about security applications involving face and eye-movement recognition. What would I need to do to get into this field?

— SECURITY-CONSCIOUS

Dear Security:

Like those working with other security products, experts working in this new field, called biometrics, design applications that focus on authentication without loopholes, says Joseph Atick, president of Visionics Corp., a Jersey City, N.J., company that specializes in security systems based on face recognition. So, if you want to develop applications that help a computer recognize faces or determine eye liveness, you may need to be a biometrics expert or research scientist with experience in pattern recognition or handwriting, and your job would be to improve the technology of recognizing facial and machine vision patterns.

Nonetheless, if you know C++ and Java, you can still prove quite valuable to this new security realm. This is particularly true if you understand digital encryption and digital certificates. Without too much ado, you could begin working as an application designer and developer applying complex pattern-recognition algorithms to security applications.

"Biometrics provides a new graphical user interface to the computer, based on something you never leave home without: your face," says Atick.

Dear Career Adviser:

I am a four-year Microsoft Certified Systems Engineer who was laid off from a start-up. Now I have a job offer from another start-up, where the compensation is a little less than what I was making before. Even with a 7% bonus, I'll still be making less than my old compensation. This offer also entails a 30- to 45-minute commute by car vs. commuting via public transportation to my old job.

Dear Nervous:

Although this is no longer the high-salary/pay-anything job market of March, your 12 years of work experience and prized credential mean you're no "dead dot-com" survivor who needs to take a pay cut to find work.

Therefore, don't start a new job by taking a salary step backward. Instead, go back to the new employer citing salary information for your skills and experience. Make clear that your old job didn't require the expenses and time of commuting by car, and then use other offers you're getting as additional "gating factors."

In your negotiation, ask the company if your offer letter can include information about a "double trigger," advises Meredith Lobel-Angel, a Malibu, Calif. attorney specializing in business development and intellectual property for young companies. This means that if the company is acquired or if your position is eliminated or moved to a location farther away, all of your options vest immediately.

Most important, however, because you're going to another start-up, focus on whether or not this company is solid, can last and builds your hard-core technical skills. Too many hops, skips and jumps on a résumé will hurt you over the long haul.

Dear Career Adviser:

I am a senior vice president of engineering and chief technology officer. I am preparing to interview for a job where I'll have technology and business responsibilities, although not in the exact technology of my experience. I would be running the technical team, presenting to potential customers, partners and investors and making decisions about what technologies to build vs. buy and which partnerships to participate in. What changes do I need to make in my résumé, which emphasizes my 16 years of technology rather than my business background?

— CTO COMMANDO

Dear Commando:

Overall, your résumé needs to be tighter and more concise, emphasizing the quantitative accomplishments that focus on time and money and on helping build the bottom line. Can you quantify how long you spent developing a product and bringing it to market, the number of people you've managed and the reasons you took and left jobs?

Because your résumé mentions two very short work experiences, a potential employer might interpret this to mean that you put various chemicals into the test tube but didn't stay long enough to see the resulting "explosions." Therefore, be specific about why you left each of those jobs.

Then, focus on finance. If you've made presentations to the investment community or generated partnerships at the multimillion-dollar level, define the amounts of money you've raised and the kinds of partnerships you've built. Did you determine how to integrate the potential partner's technology into your own solution and use the new product to expand a market? Can you discuss building a strong customer service organization that contributes to the company's revenue?

Even if you don't have the specific technology background, you can interview successfully. Make sure your potential employer sees how your prior successful experience in these complex technology and business situations can help build the employer's company. ▶

TECHNOLOGY

WAP: CHEERS AND JEERS

The Wireless Application Protocol (WAP) is much maligned, but analysts say it might help some companies get started in the wireless application world — and right now, there's no real alternative. ▶ **60**

THE GIANT STIRS

EMC Corp. has introduced a midrange network-attached storage product, the Clariion IP4700, to challenge those produced by Network Appliance Inc. ▶ **60**

SECURITY JOURNAL

From virus attacks and vendor support problems to employees surfing pornographic Web sites and computer room break-ins, it's been a challenging freshman year for our security manager. Jude assesses the successes and failures — and puts together his wish list for the coming year. ▶ **61**

EXEC TECH

Today's best ink-jet printers make photos that rival or surpass those made by traditional photographic methods. Reviews editor Russell Kay looks at two of the best, Hewlett-Packard's PhotoSmart 1218xi and Epson's Stylus Photo 2000P. ▶ **82**

FUTURE WATCH

Computer monitors that display orders built into a cook's eyeglasses may

be intriguing, but the real future of food service technology lies in the move to mission-critical application service providers. ▶ **63**

WINDOWS 2000 DATACENTER

Since the only way you can buy Windows 2000 Datacenter is already loaded onto a server that has been tested and is guaranteed compatible, the new operating system offers unprecedented stability and reliability. It clearly can handle important business applications. ▶ **64**

QUICKSTUDY

Microprocessors with a layer of silicon dioxide, known as silicon-on-insulator chips, are bringing performance and power efficiencies to high-end applications. Find out more in this week's primer. ▶ **72**

EMERGING COMPANIES

Nistevo's Web exchange lets companies collaborate to save on shipping and logistics costs. The service is already delivering substantial cost savings that have attracted large players like Land O'Lakes. ▶ **74**

EMERGING MARKETS

Looking to move to a top technology job market? Consider Denver, Dallas, Seattle, Washington, San Jose and Research Triangle Park near the North Carolina cities of Raleigh and Durham. ▶ **75**

WEB JOINS THE FIELD OF PLAY

WEB-ENABLED FIELD SERVICE SYSTEMS promise to reduce operational costs, enhance communications, integrate independent contractors and deliver self-service options to customers, but few large organizations have been able to exploit them. Things like existing infrastructure investments and the Web's limitations in providing persistent connections to workers in the field have organizations moving slowly.

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IBM

TECHNOLOGY

WAP Gets Both Jeers, Cheers for Usability

Analysts, users divided over efficiency of Wireless Application Protocol

BY MATT HAMBLEN

THERE'S quite a flap over WAP these days. Critics say the Wireless Application Protocol (WAP) is a complex and inefficient way to build wireless applications, and users describe it as slow and limited in functionality. But defenders of WAP say it's the best standard around for unifying many devices and wireless networks and that it will improve over time. WAP is also being blamed for slow networks that it can't control, defenders add.

In simple terms, WAP is both a communications protocol and an applications environment for building networked tools for handheld wireless devices, such as personal digital assistants and smart phones.

To hear some recent critics describe it, however, WAP embodies everything wrong with computer functions ported to a device with a small screen.

"WAP usability fails miserably," said Jakob Nielsen, an analyst at Nielsen Norman Group in Fremont, Calif., in a written summary released last month of a 20-user field study conducted in London this fall.

Nielsen's advice to companies considering services for workers or consumers based on WAP: "Don't waste your money on fielding services that nobody will use."

Instead, he recommends launching mobile services as soon as the next generation of wireless devices ships. Rollouts of fast third generation (3G) wireless networks and the devices to work with them might not take place until 2005 in the U.S., according to several analysts.

Users in the Neilsen study said they disliked a range of WAP wireless functions, including small black-and-white screens, the difficulty of navigating through small text with

a phone keypad or a pen touching a screen, and an unreliable wireless data connection.

Bob Egan, an analyst at Gartner Group Inc. in Stamford, Conn., offered a mild defense of WAP, saying that it's really only useful in the short-term, not as a long-term application strategy.

Mainly for Use in Europe

Gartner analysts recently issued a report in which they concluded that WAP provides a "useful short-term standard for mobile data applications," mainly for use in the European Union. But the protocol will be absorbed into a wider set of Internet standards in the long term, and there will be at least several alternatives to WAP with Java variations in the mix, the report said.

Despite its shortcomings, some IT managers in the U.S. have pushed ahead with WAP development projects. Part of the motivation is to have a

presence in the wireless world — especially with fickle consumers — in order to be fully ready for 3G demands when they come, IT managers said. Some say that 3G wireless networks will make it possible to display color video in real time over handheld devices — and that the devices themselves will be able to launch data applications in response to voice commands.

"WAP is absolutely not utopia, but it is really the first evidence of having a standard that multiple players from multiple disciplines, such as carriers and third parties, can play in," said Mark Ebel, director of digital communication services at BestBuy.com, part of Best Buy Inc. in Minneapolis. Best Buy recently enabled wireless purchasing from its Web site.

Ebel said critics are unfairly blaming WAP for problems caused by slow wireless network bandwidth and the difficulty of finding reliable universal carriers to the U.S. He said he expects it will be the middle of next year at the earliest before he sees some clear direction about what will re-

place today's versions of WAP.

Members of the WAP Forum Ltd. in London, which promotes the de facto standard before standards bodies and has more than 600 member companies, said WAP is partly the victim of too much hype about what a user might experience with a handheld. ∎

EMC Challenges Rival With Midrange NAS Device

BY LUCAS MEARIAN

In what could be dubbed Goliath's incursion into David's territory, EMC Corp. has released a network-attached storage (NAS) device that analysts say directly challenges the only other major player in the midrange NAS market.

EMC's Clariion IP6700, code-named Chameleon, is a NAS system that holds approximately 3.5TB of data on RAID devices. The product will sell for about $82,000, which makes it the Hopkinton, Mass.-based company's lowest-priced storage device and puts it smack in the middle of a price range that has been dominated by Sunnyvale, Calif.-

based Network Appliance Inc.

"Where Network Appliance has been the unopposed king of the market, now they have a legitimate competitor," said Steve Duplessie, an analyst at Enterprise Storage Group Inc. in Milford, Mass.

Flexibility and Scalability

EMC already offers a more expensive high-end NAS device, Celerra, which runs off its Symmetrix storage system.

The company controls about 30% of the storage-area network (SAN) market.

Spaceblak Corp., a London-based company, N.H.-based storage service provider, decided to test Chameleon for use with its

systems because it couldn't afford a higher-end NAS device that would also have to be supported by IT staffers at its 40 locations worldwide.

"We wanted a lot of flexibility. We don't have lots of rack space, and we want to scale fast," said Mikhil Jhingan, chief technology officer at Spaceblak. "We just booked [Chameleon] into the LAN. It took us about 20 minutes. We have been testing it for the last five or six weeks. It has passed all our tests."

EMC drew its hat into the midrange NAS arena because it already has the SAN market "pretty much covered," said a company spokesman. And while the SAN market is expected to be the faster-growing of the two, IDC in Framingham, Mass., estimates that sales of NAS devices will jump from $540 million two years ago to $5.1 billion by 2003. ∎

Making a (Security) List
And Checking It Twice

Jude looks back on a year of security challenges and gives Santa his wish list for next year

DEAR SANTA, I've been a good corporate security manager this year. I haven't deliberately obstructed our projects merely because I don't like the project staff. I've tried my best not to rant and rave at senior management any more than absolutely necessary. I've used words like *empowerment* and *paradigm* whenever possible in meetings. I may even have helped improve the security of our company a little bit. Maybe.

Please bring me some presents this year. Last year, I allowed 10 last-minute Y2K contractors, who seemed to disappear quickly afterward with much of our budget. By the way, our office doesn't have a chimney, so if you have problems getting in, just use that door around the side of the building that the physical security guys forgot to do anything about.

Yes, Jude, There Is a Santa Claus

For Christmas this year, I would like:

■ The résumés of some security staffers who know enough about the technology to keep up with our engineering teams, who have a professional enough manner that I could let them near our end users, who have a positive and supportive attitude instead of a knee-jerk "No!" response, and who have enough knowledge of security to understand what I'm talking about. Do such people exist? If they do, I'm having a hard time finding them.

■ A magic wand to wave over our users to make them understand what encryption is, what they can use it for, and that if they lose their key, we can't just give them another one, no matter how loudly they shout at us.

■ An antivirus management product that will tell me at a glance how many of our machines are up-to-date and what it plans to do about the out-of-date ones, and that tracks infections across workstations in real time.

■ An antivirus reporting tool that reports infection statistics graphically so you don't exist, but my manager says you do. At least he says that you're my only hope of getting a bonus this year, which I think is the same thing.

Scrooged by a Virus

I'm not feeling very festive at the moment. We've just had a virus attack that exploited the most nervous set of coincidences in order to take root and start deleting files, and our around-the-clock Platinum vendor support line got forwarded to an engineer in a bar somewhere in Holland who declined to help because he was eating at the time. He did promise to call us back later, which is nice of him, I guess, but we're still waiting for the call. Our vendor account manager is coming in for a meeting in a few days, so I'll vent my feelings by shouting at him.

The virus managed to weasel its way past four layers of antivirus defense. First of all, we had an unfortunate outage of our otherwise pretty reliable Trend Micro antivirus scanner on our main mail gateway. It crashed under a deluge of backed-up e-mail following a mail system outage and was down for 20 minutes. During that one, the separate e-mail worms made their way through the gateway to our internal mail servers.

Our internal mail servers also have antivirus protection, and five of the six worms were stopped dead. However, the sixth worm got to a server that hadn't been updated with the latest patch to the antivirus scanner, and the scanner failed to even notice the Visual Basic script attached to the e-mail, let alone check it for viruses. So the server forwarded the infected e-mail to the user's mailbox.

The user's workstation antivirus software was out-of-date, so when she opened the Visual Basic script attachment on the e-mail (the e-mail subject line was "US PRESIDENT AND FBI SECRETS"; somehow she failed to notice that this wasn't a business e-mail), the worm activated and deleted 4,922 files on her network drives.

Actually, they were 4,922 JPEG, MPEG and MP3 files, so I think the worm probably did us a favor by giving us a bit of disk space back.

Well, it's the end of a year, and I've been in this job for eight months now. In a way, it doesn't feel like long at all, as

P.S.: But my colleagues tell me that you don't exist, but my manager says you do. At least he says that you're my only hope of getting a bonus this year, which I think is the same thing.

I'm still trying to get some things sorted out that I started in my first few weeks. But looking back, I think it's been time that was pretty well spent. I'm sure I've made a difference to the company's security, and I'm pretty sure I've done an OK job.

Talking the Talk

When I joined the company back in April, I was a bit worried about how I was going to cope with such a high level of responsibility. I have responsibility for the security of computer operations across the European offices of a large and prestigious company, and the job came with no staff, no resources and no budgetary control.

I have coped, just about. Mostly, I've coped by completely ignoring whole swaths of the company and concentrating on securing the underlying infrastructure. We're beginning to get our antivirus protection sorted out now: our rollout of Atlanta-based Internet Security Systems Inc.'s security scanning software is just starting and has already been useful and I've got the product to start on the project to give all our users smart cards in place of their Windows passwords.

However, I think my biggest achievement has been talking. I've talked and talked to everyone who would listen and many who wouldn't, explaining to them what needed to be done about security, why we ought to do it and how they could help. I've talked to everyone, from junior staff to the highest levels of our management. I've talked until I lost my voice, and then I whispered instead.

My biggest achievement this year has been to convince people that something needs to be done. That sounds like such a trivial achievement for eight months' work, but it's been a hard eight months. Now that I've convinced them about what must be done, next year will be the time to start doing it.

Merry Christmas, everyone. ◗

Sincerely, Jude

Security Manager's Journal

Not Fade Away

EPSON AMERICA'S Stylus Photo 2000P

The best of today's ink-jet printers produce exhibition-quality photos. These prints may also last significantly longer than traditional photographs before image deterioration sets in. By Russell Kay

I GOT MY START in professional photography 35 years ago, as a lab technician making color prints in a publisher's darkroom. My tools were a $1,500 photo enlarger and a $1,000 processor. The whole procedure took about an hour per print, and at the end of that time I could see just how incorrect my color and exposure settings were and then try again.

Right now, I'm working with two consumer-grade ink-jet printers that produce better-quality, more predictable and longer-lasting results with just a few mouse clicks. One of them doesn't even need a computer. The image quality from these printers is breathtakingly good — depending to a large extent on the quality of the original image, of course.

These new printers are Hewlett-Packard Co.'s PhotoSmart 1218xi and Long Beach, Calif.-based Epson America Inc.'s Stylus Photo 2000P. They have a lot in common: Each is a six-color printer (black, yellow, cyan, light cyan, magenta and light magenta) optimized for printing photographs on their manufacturer's special paper, which comes in a variety of surface finishes. The use of six colors tends to make for better rendering of pastels and flesh tones, as well as smoother, subtler color gradations. Each machine has its strengths; both are superb printers.

One thing to be aware of when you start printing photographs on these (or any other) ink-jets: As it is with razors and razor blades, the vendors make most of their money on the consumables. The photo-grade paper you'll need runs anywhere from 15 cents to $1 per 8.5- by 11-inch sheet, and you'll use another 40 cents to $1 in photo ink per photo, depending on the images.

Archival Permanence

Photographers know that prints on paper don't last forever. If care is taken with processing and the selection of paper, however, photographic prints can last a long time. What's surprising to some folks, though, is that the newest technologies hold the greatest promise for print longevity. Why is that so surprising? Since their debut, ink-jet printers have been known for being extremely susceptible to fading caused by exposure to light.

The best-known authority on image permanence is Wilhelm Imaging Research Inc. in Grinnell, Iowa (www. wilhelm-research.com). The image longevity of most desktop ink-jet printers is rated no better than six months to three years. The HP PhotoSmart tests out at six to eight years, while the images from the Epson 2000P are rated to last 200 years. (All these ratings are for a standardized exposure to light, in a glass frame.) For comparison, standard photo-finished prints made from color negatives — the kind you get from the drugstore — have a life expectancy ranging from 15 to 60 years.

But black-and-white photography is a different matter. A Wilhelm report indicates that standard photographic paper coated with polyethylene (so-called resin-coated, or RC, paper), which was introduced in 1972, is highly unstable. Wilhelm comments: "Valuable black-and-white RC prints should never be displayed. . . . Available information indicates that the overall image stability of both monochrome ink-jet prints and current color negative prints supplied by Fuji, Kodak and Konica are greatly superior to those of black-and-white RC prints, both when prints are exposed to light on display and when kept in albums."

by 6-inch prints on a continuous roll of paper. It can also print banners up to 13 by 44 inches.

But that's all window dressing. What really sets this machine apart from the rest are its permanent, pigment-based (not dye-based) inks. According to Wilhelm tests, prints made by the 2000P are rated lightfast for 200 or more years before noticeable fading occurs, in normal indoor fluorescent lighting under a glass frame. This is based on using Epson's inks and compatible matte paper; glossy paper results in a somewhat shorter life.

This machine isn't a general-purpose printer, so I didn't bother to test its speed with anything but photographs. It does run somewhat slower than the PhotoSmart, taking about 8 minutes to print a full 8.5- by 11-inch print, but it also has a wider range of papers available.

The 1,440-by-720-dpi resolution is excellent, and it's enhanced with a variably sized ink-drop technology that makes it seem even finer.

PhotoSmart 1218xi
Hewlett-Packard Co.
$499
www.hp.com

The HP PhotoSmart doesn't handle the large paper sizes of the Epson, nor does it have the 200-year inks. But it has features that the Epson doesn't match. For starters, it has built-in slots to read CompactFlash and SmartMedia memory cards (from your digital camera) directly and make prints — no PC needed. The PhotoSmart also prints somewhat faster than the Epson. I liked that it automatically detects the type of output medium (plain or photo-grade paper; matte, glossy, or transparency). In contrast, with the Stylus Photo, you have to manually specify the paper type.

The PhotoSmart is rated at 600 by 600 dpi in black only, or 2,400 by 1,200 dpi in color. A 579 duplexing (two-sided printing) attachment is available, though I didn't test it. Assuming it works OK, that's a bargain price.

Two Winners

Photos printed on these two machines are of excellent quality and nearly interchangeable; slight differences in color rendition are easily correctable with software. There was no trace of banding by either printer during my tests, and black-and-white photos came out well on either machine. Both machines make exhibition-quality prints.

The Epson's large-format capability and archival permanence are hard to argue against, so it's clearly the better choice. But prints made by the HP look just as good. If you're not printing for the ages and don't need big prints, it's a great choice for less money. ◗

Stylus Photo 2000P
Epson America Inc.
$899
www.epson.com

This printer is quite versatile, and it's great for those who like large-format prints. It handles paper up to 13 by 10 inches, printing at a resolution of 1,440 by 720 dpi. In addition to the large-format paper, this unit also comes with an attachment for making 4-

HEWLETT-PACKARD'S PhotoSmart 1218xi

Order Your IT in Advance

Kitchen-ready IT, ASPs will change the way restaurants operate. By Sami Lais

FOR ONE STAPLE — big players calling the shots — substitute small to medium-size chains, combine with industry-specific twists, add IT, simmer for 12 to 18 months and by 2002, you'll have the hottest technology in the food service industry — mission-critical application service providers.

Point-of-sale (POS) system innovations may bring wait staffs equipped with touch-screen wireless devices that let them send appetizer orders to the kitchen while customers mull main course options. In the kitchen, the cook may be wearing eyeglasses with a built-in video monitor for easy reference to orders.

Predicting success of the ASP model may "sound like you're flying in the face of reason," says Robert Grimes, CEO and chairman of food service consultancy CynterCorp in Rockville, Md.

"The biggest single IT purchase restaurants make is their PCs with their expensive POS systems, small businesses can get services that have been

exclusive to large chains.

Restaurants use POS systems not only for taking food orders and making reservations but also for functions such as customer loyalty programs and training, Grimes adds.

However, with profit margins of between 1% and 3% for quick-service restaurants and only a little higher for full-service establishments, POS has been a tough sale, Grimes says.

"But if you can get those same applications, but browser-based, and pay by the transaction, you're looking at more like four units [in input orders and calculate bills] and $800 up front," Grimes says.

The model will succeed in part because it gives users more flexibility, he says. As technology changes, each restaurant's investment in the IT won't be so large as to prohibit updating.

Large chains, which typically refresh technology on a five-to seven-year cycle, will follow, he says. And they will increasingly opt for the ASP model as they replace components of their IT infrastructure.

The hottest technology will be that which addresses the industry's biggest costs: labor and food.

Each of those categories can run between 30% and 40% of total costs, says Grimes. "If you can shave three or four percentage points off those costs,

those points go right to the bottom line," he says.

With some chains having hundreds of restaurants nationwide, no one broadband technology can serve each. Rather than manage systems running over a mixture of cable, frame-relay and Digital Subscriber Line networks, chains may go with satellite systems, Grimes says, especially as two-way satellite communications become available.

Online Recruiting

The Web will play a larger role in recruitment. Look for growth in industry-specific employment sites and posting of student résumés by colleges and universities, says Grimes.

"At Penn State, résumés are available online," Grimes says, "so even single units can get the same access to recruitment as Appleby's."

Web sites such as Maynard, Mass.-based Monster.com offer food-service-specific pages, and others will focus on hiring hourly workers, he says.

And IT can help cut other labor costs. Online training is on the way, says Grimes. And for service, a 3% reduction in turnover can mean an extra 10% for the bottom line, Grimes says.

Wireless technologies can also play a role in streamlining the customer order process, says Jimmy Lu, president of Jimmy K. Lu & Associates, a steak house operator in Dallas.

Lu is piloting a wireless handheld ordering system with Ibertech Inc. in Bedford, Texas. New monitor technology from Compaq Computer Corp. makes handheld screens from Amaranth Technology Systems Inc. in San Diego as visible in bright sunlight as in interiors. That was crucial for patio operations, says Lu.

By the end of the pilot's first week, wait staff were competing for use of the few test units, says Lu. A waiter can send

drink orders to the bar and appetizer orders to the kitchen while continuing to take entrée orders. Often, by the time guests finish ordering, their drinks and appetizers are on the table, he says.

The wireless system lets waiters give faster service, stay on the floor looking after guests, serve more tables and increase guest turnover. That translates into bigger tips, which can improve retention because "typically you'll lose staff to another restaurant because they think they can make more money there," says Lu.

Restaurants have long used wireless technology for such purposes as paging guests. But use of wireless will become widespread in the restaurant industry only if large chains adopt it and food service applications developers create software for it, says Grimes.

Online reservations are heating up and promise to become more prevalent in the next few years. In the past few months, Lark Creek Restaurant Group in San Francisco has seen a jump in the number of reservations from online reservation company OpenTable Inc., also in San Francisco.

Customer tracking is part of the OpenTable package. If a guest regularly orders a particular wine, for example, he might be put on a mailing list for special wine-tasting events.

Online reservationist Zing Wireless Inc. in Encino, Calif., also offers advertising services. Southern California residents who signed up for Zing Wireless services get free Subway sandwiches — and Subway Restaurants Inc. in Milford, Conn., got names of people to target in promotions.

Industry-specific IT developments will include innovations such as IBM's water-cooled processor, made to survive the heat of the kitchen, and eyeglasses with built-in video monitors such as those by Micro Optical Corp. in Westwood, Mass. ❚

...a video monitor will help cooks keep orders straight.

Keeping It Cool

For a computer, few environments are as hostile as a commercial kitchen. Temperatures can reach 100 degrees; here in the CPU, meant to dissipate heat, distribute food particles in the air onto processors; and spills are commonplace. To protect its BancPOS 6000 series of dual-display computers from such a perilous environment, IBM developed a sealed unit with a water-cooled processor and channels that let liquids run off without harming the unit.

[labeled diagram: CPU and heat sink — Water-filled pipe — Cooling chamber]

WINDOWS
in the
GLASS HOUSE

Microsoft's **Windows 2000** Datacenter and its requirement for certified vendor environments means Windows can have the **reliability and scalability** for **business-critical** applications.

R UN IMPORTANT applications on Windows? A few years ago, fears of the blue screen of death would have frightened many companies away from entrusting their revenue-producing activities to a Windows platform. But Microsoft Corp.'s Windows 2000 Datacenter Server — the product and the program — is changing many minds about letting Windows into the glass house.

Long ago, when computers meant IBM, mainframe vendors controlled every aspect of computer systems: hardware, operating system and applications. This helped vendors ensure stability and reliability levels, at least

BY EDMUND X. DeJESUS

until the courts made them unbundle their systems.

In the PC era, the situation changed. PCs were built for modularity of hardware, software and operating system. With many vendors selling hardware, applications and drivers, who could guarantee stability and reliability? Finger-pointing was the primary response.

However, as CPUs became cheaper and more powerful, vendors began to pack more chips into machines. These servers were more capable than ever but still suffered from a multitude of hardware platforms and a bewildering array of drivers and applications.

Windows 2000 Datacenter Server is

Microsoft's attempt to change that, coming full-circle to the mainframe model. No, Microsoft isn't building machines, but it is trying to exercise some control over the hardware, operating system and driver and application bundles. Enterprise users are finding the result compelling, not only in terms of cost but also in terms of stability, reliability and simplicity.

PRODUCT AND PROGRAM

Datacenter is both a product and a program designed for enterprise users. It's the top-level Windows operating system from Microsoft — but the company won't sell it to you. Instead, you

buy Datacenter in a package along with certified, supported server hardware from a traditional vendor such as Compaq Computer Corp. or IBM.

As part of the Windows 2000 family, Datacenter shares that operating system's services, including Active Directory and security. Datacenter offers impressive handling of up to 32 processors per server. This allows great scalability when paired with appropriate multiprocessing hardware, and it's a lot more than Windows 2000 Advanced Server can offer. Also, Datacenter can address up to 64GB of main memory for managing complex applications.

Datacenter includes a Process Control tool to help manage all those processors. The tool lets you oversee

workload and performance across all processors. You can dedicate certain processors to certain applications, so those applications don't have to go searching for idle cycles, thus reducing overhead and bottlenecks. It's also possible to change the load balance dynamically, pulling more processors in for certain applications when needed.

Multinode clustering of up to four servers is also part of Datacenter. Four-node clustering is far better than two-node clustering; with the latter, if one server fails, you start praying that whatever took down your primary server doesn't hit your only remaining server. Four nodes give you more breathing space. If one server fails, you still have three as backups.

Cascading fail-over is highly desirable for systems that must keep running to keep revenue flowing, such as consumer-oriented e-commerce. With some other operating systems, clustering is available only through a third-party product, rather than as a part of the operating system itself. Here, Datacenter has a distinct advantage.

GET WITH THE PROGRAM

Perhaps more important than the software is Microsoft's Datacenter accreditation process. A PC vendor can ship a copy of ordinary Windows on a box and call it a system. Datacenter resellers, however, must agree to a rigorous process for ensuring reliability and stability. This includes a mandatory 14-day test for every hardware-driver-software configuration. Typical drivers include background antivirus and backup products. "Most problems with NT were really due to problems with drivers," says Steve Every, product manager of Microsoft operating systems at Blue Bell, Pa.-based Unisys Corp.

The system runs a battery of demanding tests under heavy loads to find possible glitches. These tests have already exposed some driver problems, which have been fixed. Even after passing the 14-day marathon, whenever any part of the tested configuration changes, a reseller must do a seven-day retest. Testing of the four-node cluster features is a separate requirement. "Customers were doing all this kind of testing themselves," says Robin Hensley, director of the Datacenter program for Compaq's Industry Standard Server Group. "By taking this on ourselves, we lessen the need for customer testing, reducing the time for deployment." When a customer gets its new system installed, the staff knows it's a stable system and that it's already been through the mill.

Support and service is also different; it's a joint reseller-Microsoft operation that should eliminate finger-pointing and expedite problem resolution. Resellers must offer a list of services to

their customers and have programs in place to guarantee them. These services include a guaranteed minimum of 99.9% availability and a maximum of four hours' on-site response to problems. The reseller must also assist customers in planning and designing their systems. This lets the reseller assess the level of availability that's desired and possible for a given customer situation. For example, customers may not have in place procedures to support high availability. Even their power supplies can affect what's possible for them.

Limiting the number of certified environments also simplifies problem-solving. For instance, it's far easier to maintain a few standard systems on which to rapidly replicate problems.

You might think all these requirements would scare away resellers, but many hardware vendors have signed on to the program. The draw for them is that they get a system and a program that best shows off their top-of-the-line multiprocessor machines and eliminates the cringe factor. Each major server vendor has at least one product line

supporting Datacenter.

The Datacenter change control process also minimizes customer impact and maximizes reliability and stability. Changes in the operating system, hardware, drivers and software must all be thoroughly tested with resellers before being certified and offered to customers. Changes will occur as a unified bundle about every six months. Customers will know when changes will be released and will be able to accept or pass on each update package as they see fit. Thus, system changes will be painless and an improvement, not an impediment.

Microsoft is also initiating an application certification process. To be certified for Datacenter, the application must undergo testing by independent lab Veritest (a service of Waltham, Mass.-based Lionbridge Technologies Inc.) for Windows 2000 compliance, stability and the ability to handle Datacenter features like multiprocessing, big memory and clustered environments. Certified applications will be preferred for these environments.

> **We did look at other non-Windows solutions. We concluded that Datacenter on the Compaq platform would give us what we needed.**
>
> MARK PRIETO, CIO,
> ELECTION.COM

WINDOWS in the GLASS HOUSE

Obviously, customers reap a number of benefits from this combination of product and program by getting a comprehensive, integrated environment, not a crazy quilt of hardware and software awkwardly meeting for the first time. We can expect this to contribute to the overall system stability, reliability and availability.

This stabilizing control over the operating environment isn't limited to a single machine or reseller. "Customers aren't locked into a sole manufacturer," points out Michel Gambier, group product manager of Datacenter Server. The number of notable resellers actually gives the customer a lot of choice.

Furthermore, Microsoft sets only the minimum standards. Resellers can offer more features or better prices. For example, Stratus Computer Inc. in Maynard, Mass., known for its fault-tolerant systems, aims to better the availability mark by offering 99.999% uptime with Datacenter — that's about five minutes of downtime per year. This shows the breadth of choice available to the customer and also the regard these manufacturers have for the Datacenter product as the basis for a stable and reliable system.

SELLING THE SYSTEM

Hardware manufacturers are approaching Datacenter from several angles. Compaq has designated its ProLiant 8500 model as its Datacenter machine, with eight-way and 32-way multiprocessing options. The company has also established its own testing lab in Bellevue, Wash, close enough to Microsoft's headquarters to simplify collaboration. Compaq served as a prime development environment for Microsoft in the development of Windows 2000.

Unisys comes from a glass-house background. Its hardware offering is the ES7000, a 32-way multiprocessor machine with Unisys' Cellular Multi-Processing server architecture.

The variety of Datacenter features makes for an interesting combination of likely customers. For example, large dot-coms can benefit from the around-the-clock availability, cluster-empowered fail-over and scaling capabilities. "Many large e-businesses have been wondering, 'How are we going to make it through Christmas 2000 when we barely made it in 1999?' This scalability to deal with seasonal — and transient — demand is vital to them." Hensley says. Processor-intensive operations such as heavy-weight database support — typical for many large enterprises — would benefit from the multiprocessor and memory power. Application service providers and Internet providers, which must guarantee uptime, would benefit from both the increased stability and fail-over functions of certified systems. Such enterprises include financial institutions and e-businesses that must be up to make sales.

More broadly, any enterprise that seeks to consolidate server functions could benefit from Datacenter's multiprocessing. This is especially attractive if an organization is currently supporting servers from multiple vendors.

Companies that wish to reduce the number of operating systems they support would probably welcome the opportunity to move to a single enterprise wide system. Since Microsoft already owns the desktop, that piece of the puzzle must stay in place, but Datacenter makes it possible to move enterprise-level applications from other operating systems, such as Unix to Windows 2000. This can simplify staffing, since organizations wouldn't require separate staffs for each environment or individuals proficient in multiple systems.

"At Compaq, we talk to both, the Intel/Windows and the RISC/Unix community. We see the desire for single, unified systems," says Hensley.

Of course, moving to a new operating system requires capital investment for hardware and software, as well as additional staff training. Companies unable to make this commitment will most likely steer clear of Datacenter as long as their current systems remain adequate. However, the savings that Datacenter can offer in maintenance, management and support may tip the balance.

DOT-COM VOTES FOR DATACENTER

Garden City, N.Y.-based Election.com Inc. provides online election services to governments, unions, and other organizations worldwide. The company hosted the first legally binding online election — Arizona's Democratic presidential primary — and many absentee ballots in the November presidential election originated online with Election.com.

The company was one of the first customers of Windows Datacenter. "We did look at other non-Windows solutions," explains Mark Prieto, Election.com's CIO. "We concluded that Datacenter on the Compaq platform would give us what we needed."

What Election.com needed was a reliable and scalable operating environment that could ramp up quickly. For the site to successfully handle elections, reliability of the system is clearly a must. It needs to be ready to handle online voters whenever they decide to vote. And the site must be able to handle an unpredictable number of online voters. "For our student election, we handled over 700,000 voters in a single day," notes Prieto. This is possible only in a highly scalable environment that can add processing as needed.

Finally, Election.com must be able to ramp up a new service rapidly. "We have to be able to handle new clients quickly, sometimes at the last minute, so scaling becomes crucial," Prieto says. The company is finding that scalability with Datacenter.

For hardware, Election.com uses a Compaq ProLiant 8500 cluster, which has been reliable and presented no problems. Since the company's proprietary applications already use Microsoft's SQL Server (which is scaling as Election.com needs it), the Windows connection is a bonus. And the system met the company's budget.

Election.com says it anticipates smooth sailing, thanks to the Datacenter support program. Staffers say they have found the support and service to be superb and expect to be able to upgrade gracefully when new service bundles become available.

REALTECH GETS REAL NEW TECH

The operations of Walldorf, Germany-based realTech AG are based on SAP R/3 and the mySAP environment, along with associated technologies such as security and hosting. Datacenter offers realTech the possibility of consolidating several R/3 systems onto one hardware platform with one operating system. For hardware, realTech chose Unisys' ES7000 server.

Since realTech was looking specifically at Windows products and the markets they can serve, the company didn't explore non-Windows options. It first considered Windows 2000 Server and Advanced Server, but those didn't offer the needed control functions, such as Job Object Control (the ability to control the available resources for a process), which was Datacenter's most important feature for the company.

Support for more memory was next on realTech's wish list. Large-scale programs, such as databases and SAP, especially benefit from large quantities of RAM. Reliability was also essential. RealTech will use four-node clustering, which will help the company evaluate high availability with Datacenter.

"We were very impressed with the joint support program, which lets the hardware vendor make sure that the customer is supplied with the solution to a problem and not just simply overwhelmed with more and more information," says Neil D. Morton, certified SAP technical consultant at realTech. The company says vendors will also benefit from the support program because they will be able to gather all the information regarding their hardware and the operating system.

Customers are definitely interested in the Datacenter program. Unisys reports that even during its beta program, it had more than 30 customers interested in the ES7000 running Datacenter. After Datacenter became generally available, that demand jumped to about 200 units for the year.

A report by Boston-based Aberdeen Group Inc. suggested that Datacenter will initially be deployed by enterprises willing to accept the safe "vanilla" applications in exchange for the benefits of scalability, reliability and stability. However, the future of Datacenter will broaden once it establishes itself as an operating environment. ▶

Who's Marketing Windows 2000 Datacenter Today?

VENDOR	SERVER MODELS
Amdahl Corp. www.amdahl.com	Fujitsu servers
Bull H.N. Information Systems Inc. www.bull.com	Express5800/180Rd-7
Compaq www.compaq.com	ProLiant four-way and eight-way
Dell Computer Corp. www.dell.com	PowerEdge 8450 eight-way
Fujitsu Ltd. www.fujitsu.com	Fujitsu servers
Fujitsu Siemens Computers www.fujitsu-siemens.com	PRIMERGY N800 eight-way
Hitachi Ltd. www.hitachi.com	PC Server HA8000
Hewlett-Packard Co. www.hp.com	NetServer for 8500 DC eight-way
IBM www.ibm.com	Netfinity 8500R eight-way single node to four-node clusters
International Computers Ltd. www.icl.com	Its own and Fujitsu's servers
Stratus Computer www.stratus.com	ftServer
Unisys www.unisys.com	e-@ction Enterprise Server ES7000

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TECHNOLOGY

WITH A SERVICE territory of 900 square miles and more than a half-million customers, JEA must manage its 100 field personnel judiciously. The utility giant needs to strike a balance between timely customer response and cost-effective field service. For JEA, that means migrating to the Web as a platform for field service delivery.

"We have a target to be one of the premier providers of customer service, and we want the Web to be a major piece of how we do business," says Ron Baker, CIO at the $5 billion Jacksonville, Fla.-based company, which was formerly named Jacksonville Electric Authority. To that end, he has given IT services director Ann Freudenthal the task of converting field service operations to iM:Work, a wireless, Web-enabled mobile workforce management suite from Alpharetta, Ga.-based iMedeon Inc. JEA started rolling out iM:Work this month.

The Web Wave

Large organizations everywhere are exploring the Web as a delivery medium for field service functions. By equipping trucks with browser-based clients and technicians with Web-enabled laptops or handhelds, companies hope to reduce the costs they're incurring with other mobile technologies. They're also trying to decrease the number of support calls by establishing Web-based self-service portals and knowledge bases for their customers.

"Field service is becoming a mobile application and taking advantage of an e-business platform," says Peggy Menconi, a vice president at Boston-based

AMR Research Inc. "A business can encompass everyone in its field service organization, as well as third-party technicians, with this platform. That's where the industry is going."

In the past, says Menconi, many companies relied on homegrown systems or simple spreadsheets to manage field service operations. But the complexities of juggling such variables as geography, personnel availability, skill sets and service-level agreements — and the logical transition to a mobile computing platform for remote workers — have many companies moving toward commercial, Web-enabled workforce management software suites. These packages are coming from traditional field service dispatch software vendors as well as front-office application suite providers that incorporate field service modules in their larger customer-care offerings.

But despite the Web's promise to dramatically improve the way service is delivered, few large organizations have been able to exploit it for field service. Reasons include existing infrastructure investments, the limitations of the Web to provide persistent connections to workers in the field and the immaturity of Web-based field service automation products.

Promises and Reality

Such limitations mean JEA will have to wait to roll out a true thin client that uses a standard browser and enjoys persistent communication with back-office databases for real-time updates. In the meantime, iMedeon's field client piece, iM:Field, runs as a Java application with a local data store on JEA's truck-mounted notebook computers. iM:Field lets site staffers continue to work on current orders when they

Waiting
FOR THE WEB

TECHNOLOGY

move out of range of the truck. It then automatically synchronizes data and receives new orders when they move back into range.

Baker says he expects the new Java client, and eventually, the browser-based thin client, to reduce software upgrade costs in field trucks. "With the fat client on the trucks, upgrading the field software [was] very expensive. We'd have to bring 50 to 70 trucks into headquarters, and it was a big IT effort to reconfigure them," he says.

The new architecture will also enable JEA to achieve one of the primary goals of field service: customer self-service for logging and tracking service requests. Indeed, the ability to decrease the number of customer interactions with a call center is one of the biggest benefits of Web-based field service.

"Within the first year of deployment, a well-tailored Web application in a wired city would be used by 7.5% of customers for self-service. If a large organization off-loads that percentage of calls in just the first year, the savings would be significant," says Bud Bivin, an analyst at Gartner Group Inc. in Stamford, Conn. Off-loading calls means field workers can focus on accounts that need on-site attention and can ultimately serve more customers.

Servicing more accounts is the goal at High Speed Access Corp. (HSA), a Denver-based provider of broadband services. The company currently works with third-party contractors for installation, a process that can require numerous phone calls to schedule service.

"We're working to schedule more installs, and that process had been slowed by the number of phone calls with customers and contractors. Today, our average number of contacts on a new install is anywhere from five to 14, and we want to get that down well under five," says Kevin Alcox, vice president of systems engineering at HSA.

To reach that goal, HSA chose a suite of Web-based automation software from Campbell, Calif.-based ClickSoftware Inc. HSA has gone live with the software in 13 of its 145 sites. "The old system was characterized by a lack of communication, too many faxes and no escalation [or monitoring] process," Alcox says. "Now, we just take one call from the customer, and the contractors track the calls they're responsible for over the Internet."

Missing Links

Rich Mortimer, manager of service support at Milwaukee-based Johnson Controls Inc., says he would love to convert his company's field service operations to a Web-based platform, but he adds that he doesn't feel that the technology is ready yet.

Johnson Controls is a $17.2 billion provider of automotive systems, commercial building control systems and services, and energy-management and integrated facility-management services. The company has 30,000 customers in North America alone and employs about 2,200 field service employees. Mortimer says the company is consolidating data from 195 databases into a single Oracle database and is integrating legacy systems with its field service automation software, Service-Alliance, from Horsham, Pa.-based Astea International Inc.

"Our service business has been pretty low tech, using paper work orders and faxing or calling them in," says Mortimer. "We need to replace the legacy systems that we bought and overcustomized to make them work for our business."

Taking It Slow

For customer care, Johnson Controls has centralized data in one Oracle8 database running on Unix, with thin-client technology from Fort Lauderdale, Fla.-based Citrix Systems Inc. for internal users. Johnson Controls has rolled out ServiceAlliance to handle after-hours calls for service. Mortimer says he's been exploring ways to leverage wireless and Web-enabled applications for Johnson's huge field service organization, but he's been forced to move slowly.

"We've investigated remote technology but never naturally deployed it. We were looking at Web-based field access, but wireless Web isn't there, so we're retrenching and running a small client with replication," says Mortimer. "The industry has been talking about wireless Web for a while, but the technology has made limited advances. That reality has forced us to reset our expectations."

Furthermore, Johnson Controls is evolving its field service model so personnel can be more like consultants when they go on-site, but the Web's current limitations mean they can't access the vast amount of information they need in order to fill that role.

"We want our field workers to spend more time on-site to help customers look at more products, so we need to be able to get them more information and find ways to price and to bill remotely," Mortimer says. "We have a huge intranet with tens of thousands of pages [of information on such things as parts and services]. How do I make that available to the field with current technology? The world isn't there yet."

One problem is the equipment the field workforce must carry for remote access. While laptops provide a better screen for working with clients, Johnson's field service personnel simply aren't always in a situation where logging on to download and upload data makes sense.

"As far as using the Web goes, how

do they connect when they're in the boiler room of the building? And hooking up is a productivity killer. [Personal digital assistants] are better than laptops because of the touch screen and instant boot-up," says Mortimer, but they can't handle huge data downloads, because transmission speeds and costs are prohibitive. Many mobile workers are now forced to carry multiple devices to do their work.

"Everyone's carrying two widgets; there's no one welding around with just one," Mortimer says. "After all, when you're working with a service base, you can't just say to your customer, 'I can't log on today.'" ■

Gilhooly is a freelance writer in Falmouth, Maine.

Self-Service Economics

Like most businesses providing customer care, field service organizations are trying to off-load calls by letting customers log service requests and resolve simple problems themselves. Though few organizations have deployed large-scale self-service efforts, they're beginning to take advantage of Web-based portals and problem-resolution capabilities offered by field service software providers.

The cost savings of customer self-service deployments are significant. According to Cambridge, Mass.-based Forrester Research Inc., firms involved in business-to-business customer support spend, on average, $33 per phone incident, $10 per e-mail contact, $7.80 per chat contact and only $1.17 for Web-based self-support.

Nevertheless, analysts predict that large organizations with established field service practices will continue to rely heavily on their call centers to handle customer requests. "We're not seeing huge demand for Web self-service from our customers, though some use e-mail to log requests," says Rich Mortimer, manager of service support at Johnson Controls. "In facilities management, you've got guys requesting service from the boiler room, and they're not into logging requests."

Though Johnson Controls wants to roll out such capabilities, says Mortimer, "our challenge has not been getting a Web-based field service application, but how to get the kinds of Web-based applications that customers want to work together to look like one application to the user. Multivendor applications have limited sharing of security roles and workflow."

– Kym Gilhooly

Vendors claim that Web-based systems will improve field service operations. But is the technology ready? By Kym Gilhooly

Windows 2000 ADVANTAGE

The Web Magazine for IT Leaders Implementing Windows 2000 and Windows NT with Compaq Services and Solutions

Online this week:

POINT OF VIEW

Compaq integration.99 delivers enterprise e-commerce solutions

Integrating enterprise applications recently got a boost with Compaq's integration.99, The initiative helps solve the largest, most difficult business integration problems.
www.windows2000advantage.com/pov/
12-11-00_integration.asp

TECH EDGE

Understanding Microsoft Application Center 2000

The automatic detection and system resolution functions of Microsoft Application Center 2000 eliminate mundane administrative tasks and assure system availability without direct system administrator intervention.
www.windows2000advantage.com/
tech_edge/11-27-00_understanding.asp

Q & A

Brian Valentine, "chief cheerleader," driving force

Brian Valentine is a key player in Microsoft's Windows division, where, in addition to being "chief cheerleader" as he describes himself, he is also a driving force behind the evolution of Windows 2000.
www.windows2000advantage.com/
11-20-00_valentine.asp

COLUMNS

Active Directory: to serve, protect, provision

The great thing about directories is that they provide a singular place for defining and storing important enterprise data. The bad thing about directories is that they provide a singular place for defining and storing important enterprise data.
www.windows2000advantage.com/columns/
11-27-00_activedirectory.asp

CASE STUDIES

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Have would you like to cut your support calls by 60%? Or manage 150 sites worldwide with only two system administrators rather than one of each site?
www.windows2000advantage.com/
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NEWS >

Compaq, Andersen Consulting in enterprise bid

Compaq and Andersen Consulting have expanded their relationship to put Andersen's new and existing enterprise applications on Compaq ProLiant servers running Microsoft Windows 2000.

For the full story, visit:www.windows2000advantage.com/news/
12-11-00_bid.asp

CASE STUDY>

FreeMarkets guarantees uptime with server clustering

Using Datacenter Server, this business-to-business firm is matching increased customer demand with proportionally increased computing capacity while maintaining "mainframe stability."

For the full story, visit: www.windows2000advantage.com/300

Q&A>

Active Directory worth the internal Unix strife

Dan Kunetzky, vice president of systems research at International Data Corp., says that Windows 2000 is headed down a successful path. He also weighs in on a wealth of additional Windows 2000 topics, including the value Compaq and its "fine machines" bring to Microsoft Windows 2000.

For the full story, visit: www.windows2000advantage.com/300

MOMENTUM SERIES >

Active Directory helps to keep VPN management simple and effective

When companies set up VPNs, they have to maintain a list of authorized users and have some means of ensuring that anyone who is granted access to the VPN is on the list. Authentication mechanisms can range from a user name and password to a public key infrastructure (PKI) system that uses digital certificates.

For the full story, visit: www.windows2000advantage.com/
momentum/11-20-00_vpn.asp

www.Windows2000Advantage.com/300

GENERATION 2000 >

Microsoft Mobile Information 2001 Server enabling mobile users to go wireless

In anticipation of high projected wireless mobile Web and e-mail access demand, Microsoft's Mobile Information 2001 Server – which was introduced as part of the .NET enterprise server line – was created with Microsoft Windows 2000 mobile users in mind. Expected to become available during the first half of this year, Mobile Information 2001 Server will offer not only e-mail access, but access to calendaring and other wireless applications such as customer relationship management (CRM) and accounting.

The new server will be located in corporate networks next to the Exchange 2000 Server. In this environment, information destined for wireless users will be transferred from the Exchange 2000 Server to the Mobile Information 2001 Server, which in turn will send the data over the internet to a wireless phone carrier. The wireless carrier will reformat the information for mobile phones, and transmit it over the airwaves to the appropriate recipient. Mobile users will be able to send e-mail or other data along a reverse path back to the Mobile Information 2001 server.

In addition, Microsoft will deliver a different version of the server for wireless telephone carriers. That server will allow wireless telephone firms to deliver corporate e-mail and other intranet data to mobile users more efficiently than would a corporate mobile information server.

"This is a key first step in our strategy of enabling enterprises to give their employees access to all the information inside the corporate firewall," says Patrick Fox, director of marketing for Microsoft's Mobility Group.

Some analysts believe Mobile Information 2001 Server is entering the market just as demand for wireless enabled applications is taking off.

For the full story, see: www.windows2000advantage.com/2000gen/12-04-00_mobile.asp

QUOTE OF THE WEEK >

"Integration2000 doesn't force you to abandon your existing, tightly-coupled legacy solutions. But since the world you have to connect to is expanding pretty dramatically, the chances are good that you will need to get content from some third party or hosted services, and this strategy will help."
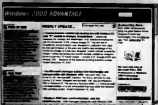
— Dwight Davis
vice president
Summit Strategies

Silicon on Insulator

BY ALAN JOSH

REMEMBER THOSE childhood treats known as pigs in a blanket? There's a new chip-fabrication technology you might think of as a "chip in a blanket."

Silicon-on-insulator (SOI) chips are made with a layer of silicon dioxide insulation that separates individual transistors from the underlying silicon wafer. In conventional CMOS chips, transistors sit in direct contact with the wafer. SOI's hair-thin blanket of silicon dioxide helps keep electrons flowing efficiently from one transistor gate to another without letting stray electrons leak out into the substrate. The result is a microprocessor in which electrons get to their destinations faster. These chips provide better processing performance and SOI-based computers use less power because there's no waste due to leaked electrons.

SOI Comes to Market

IBM began shipping the first commercial servers using SOI microprocessors last summer, bringing to market a power-saving technology that had for years been tried in research labs but until recently had no commercial demand.

The additional manufacturing steps needed to produce SOI chips have until recently priced the technology out of an intensely competitive market. But now, thanks to the requirements of high-end applications like e-business computing, some performance junkies are willing to pay price premiums of perhaps 25% for chips that outrun conventional CMOS processors.

According to IBM, head-to-head comparisons of equivalent SOI and CMOS chips show that SOI chips have a speed advantage of 20% to 30% and consume half or one-third the power of CMOS chips.

Although the SOI chip production process involves more steps than production of

> ## DEFINITION
> Silicon on insulator (SOI) is a chip manufacturing technique that shrouds transistors in a cloak of silicon dioxide to shield them from the wafer substrate in order to control electrons more efficiently. The result is improved processing performance and lower power leakage compared with conventional CMOS chips.

CMOS chips, existing chip-fabrication facilities don't require major overhauls to accommodate SOI. Once the silicon dioxide film is spread across the wafer surface, the process of placing the transistors on top of the insulating layer uses the same lithography and tools as CMOS chip fabrication. Thus, SOI fabrication is an evolutionary step in chip fabrication, says Joel Tendler, director of Power4 technical assessment at IBM's Austin, Texas, facility. "We need to use these 'tricks' to keep Moore's Law alive," he adds.

No other chip maker — including market forces like Intel Corp. and Sun Microsystems Inc. — has announced plans for production of SOI processors as enthusiastically as IBM announced its plans.

Earlier this year, IBM began shipping high-end p680 servers with the new chips, and it plans to offer an SOI-based model in its AS/400 line by

year's end. These initial SOI systems support high-end applications like e-business and Web servers, transaction processors and data-mining hardware. Next year, IBM plans to introduce Power4 systems with the new chips and later will use SOI processors for portable devices that require power efficiency.

Intel continues to push performance using CMOS technology, achieving speeds of 2 GHz, notes Steve Leibson,

chief analyst at Sunnyvale, Calif.-based MicroDesign Resources and editor in chief of the firm's "Microprocessor Report" newsletter. Whether SOI will become commercially viable for any company other than a diversified behemoth player like IBM is still unclear, he adds.

"IBM] needs a manufacturing process for high-end mainframe chips [and] the Power4 line," says Leibson. "In order to offer better versions of those machines, they have to push the technology. Then they can look at the merchant semiconductor market. It will take a while for SOI to drift down to business PCs because ... we now have enough megahertz for things like Microsoft Office. [Business users] won't need SOI until multimedia becomes commonplace." ◆

Josh is a freelance writer in Francestown, N.H.

SOI vs. CMOS

TRANSISTOR — **CONDUCTOR** — **ELECTRIC CURRENT**

SILICON SUBSTRATE

SOI Chip
In this cross-section of an SOI chip, a hair-thin layer of silicon dioxide is used between transistors and the wafer substrate to more efficiently channel electrons.

CMOS Chip
Conventional CMOS chips without the insulating silicon dioxide layer require more time and electrical power to compensate for electron inefficiency.

TRANSISTOR — **CONDUCTOR** — **ELECTRIC CURRENT** — **ELECTRON INEFFICIENCY**

Online Exchange Helps Trim Shipping Costs

Nistevo's collaborative logistics service lets firms cut expense of wasted truck capacity

BY EMILY KAY

WITH EMPTY truck space a huge cost concern for companies like butter maker Land O'Lakes Inc., the ability to share transportation costs with other shippers is very attractive.

"We spend $300 million a year on carriers," says Jim Lord, director of strategic initiatives and alliances for the dairy group at Arden Hills, Minn.-based Land O'Lakes. "If trucks are coming back empty, it adds up fast."

That's where Nistevo Corp. comes in. A provider of Web-based collaborative logistics networks in Eden Prairie, Minn., Nistevo enables Land O'Lakes to pool carrier resources with Minneapolis-based General Mills Inc. and 14 other shippers through Nistevo.com, its private, Web-based freight and logistics exchange.

The Capacity Game

Throughout the logistics supply chain, shippers are looking to collaborate with partners to save on transportation costs. Shippers tend to buy truck capacity in one direction. When the truck returns empty, it costs shippers more while carriers earn less. In fact, almost 19% of all trucks on the road are unfilled, says Frank Bernhard, an analyst at Omni Consulting Group LLP, a consulting firm in Davis, Calif.

That wasted capacity costs U.S. firms $30 billion per year, says Kevin Lynch, founder, president and CEO of Nistevo. Nistevo attempts to fill excess capacity with its collaborative electronic logistics service, which lets shipping partners work together via the Internet to cut transportation costs and boost carriers' sales.

With the Nistevo network, they can collaborate throughout the logistics process, from managing complex contracts to loading empty trucks.

Web-based logistics management also lets companies collaborate beyond their own enterprises with suppliers, carriers and other shippers.

"Nistevo's application allows for the reduction of empty back-haul mileage on a large scale, allowing for an average

CEO KEVIN LYNCH says Nistevo plans to dominate the U.S. trucking market before gradually branching out.

of 9% to 18% cost savings in back-haul, as well as significant savings through managing contract leakage," says Tina Piper, an analyst at research firm IDC in Framingham, Mass.

Nistevo boasts some big-name customers, including Monsanto Co., The Pillsbury Co. (now part of General Mills), Fort James Corp and Graphic Packaging Corp.

Of the myriad e-commerce initiatives in which General Mills is involved, Web-based

collaborative logistics using Nistevo's service offers the $6.7 billion company "the greatest opportunity for immediate impact," says Randy Darcy, senior vice president of operations at General Mills.

"It was clear to us that unlike a lot of technology companies claiming they had product and didn't, Nistevo had it, and it was up and running."

Darcy estimates that Nistevo will help General Mills save between 4% and 7% of its total logistics expenditures through reduced administration costs and better use of capacity. Using the Nistevo network to share truck capacity with Fort James alone should save General Mills about $800,000 of the $3 billion that it spends annually on logistics.

"We're already able to do some things with the tool, even though we're not completely up and running yet," says Darcy. General Mills is using Nistevo's contract management component and some of its execution capabilities.

Rules of the Road

Nistevo's alliance partners work jointly to determine rules governing who pays for additional miles traveled to load another firm's freight, what to do about a canceled shipment and how to divide savings. Nistevo builds such rules into its contract management software.

Identifying their own "rules of engagement" will be the key to shippers' success, says Darcy. "We simply couldn't do this without Nistevo's Web-based application," he says. "At the same time, the application is no good unless companies know how to work together."

Trucking industry professionals say they agree that the future of logistics is in Web-based collaboration. According to a statement from the American Trucking Associations Inc. in Alexandria, Va., "Failing to build systems that allow for electronic collaboration among trading partners could spell doom for companies hoping to thrive in the transportation industry."

Kay writes about technology as a principal at Choice Communications, an editorial consulting firm in Chelmsford, Mass.

F ACE IT: WITH all the job pressures and user expectations on IT workers today, sometimes you just want to get away from it all — for good.

That may mean a move. But just anywhere won't do, since you want a job and location worthy of your talents. There are the easy choices for technologists — New York, greater Boston and the other usual IT meccas. But not everyone likes the lifestyle or prices of the most popular — and most populated — high-tech regions.

Instead, you might want to consider North Carolina's Research Triangle Park, San Jose, Denver, Seattle, Dallas or Washington. These locations, according to national recruiters and relocation experts around the country, are some of the new hot destinations for restless IT workers.

RESEARCH TRIANGLE PARK:

The Research Triangle Park near the North Carolina cities of Raleigh and Durham is continuing its upswing of large-scale technology development and luring. The area is one of those regions that Beth Gilfeather, a vice president at Boston-based Stride & Associates Inc., describes as "a hot night club. When it first comes out, it's very trendy and hot. Give it three to five years and everyone's there, and the cost of living goes up."

So if you're considering a move, now is the time. High tech is booming and includes biotechnology and the semiconductor industry. According to the Research Triangle Foundation, a private, nonprofit organization that owns and develops Research Triangle Park, IBM alone employs 14,000 in the area.

SAN JOSE:

Even with a slowing stock market and its impact on many firms in the dot-com hiring landscape, there are lots aplenty in San Jose.

"We gained a client up last week, a start-up, that right now has five employees but needs 50 people in four months," says Bob Lunzi, CEO of eJobs

Inc., a recruitment firm in San Jose.

IT professionals who can expect to find an especially warm welcome here include programmers, network specialists (especially those with wireless communications experience) and database administrators (particularly those who know Microsoft SQL Server 7). There's also plenty of demand for Unix people and those who know the Web.

Salaries for IT professionals have been near the top compensation levels available. And as stock options begin to look riskier to many job candidates, firms may have to offer even more cash.

SEATTLE:

If thoughts of Seattle immediately conjure up Microsoft Corp., that's understandable for those who don't know the region well. But there's much more to the area than one company. "We're seeing places like Seattle become IT hubs," says Gilfeather. The myriad other local companies include software vendor RealNetworks Inc., as well as many Microsoft spin-offs. Coffee company Starbucks Corp. has its corporate headquarters in the Seattle area, as do a number of In-

ternet businesses such as Cooking.com, which sells kitchen-related products.

DENVER:

Most regions have their specialties, and the Mile High City "is becoming telecom central," says Tom Hudgins, director of business development at Intech Global Solutions, a recruitment and consulting firm in Irving, Texas. But there's plenty of other work for technologists, too. "Object-oriented development and enterprise integration of that development is on the top of our list as well," says Gill Brown, senior recruiting manager at Dallas-based Perot Systems Corp., who adds that many companies are looking for Web-related personnel.

A senior software engineer could command $79,000 in the greater Denver market, while a data architect could fetch more than $100,000, says Jill Miller, human resources manager

at Reason Inc., an application developer in Aurora, Calif.

"For entry-level programmers, you're talking about an average of two to four weeks" to fill a job requisition, says Traci Bowen, director of human resources at Denver's Evolving Systems Inc. Senior personnel can take four to six weeks to hire.

WASHINGTON:

Even in a tight national labor market, some companies in the Washington area are surprised at how much they must pay for good employees and how hard it can be to find them. "We had a difficult time recruiting quality [IT] management at the top level," says David Steinberg, CEO of InPhonic Inc., a Washington-based wireless communications firm.

Some positions Steinberg expected to fill within two months took four times as long. Web developers were the hardest to locate. "We couldn't find anyone at any price," Steinberg says. Jobs that might demand $40,000 to $50,000 in other parts of the country can run twice that in the Washington area.

With America Online Inc. located just over the Virginia border, Internet-related businesses are widespread in the greater Washington area. So, too, are firms that offer services to the government or perform defense work.

DALLAS:

A big reason IT professionals might consider a move to Dallas is that it offers a lower cost of living than many high-tech centers in the country. "It's a very different cost of living down here," says Brown. Many in the region point to the lack of a state income tax, but Brown says the sales tax and other taxes, which are higher than in many other areas, make up the difference.

There's a wider range of industries than in many other technology centers, including transportation (Greyhound Lines Inc.) and automotive (a General Motors Corp. assembly plant). ▶

Sherman is a freelance writer in Marshfield, Mass.

Where's Everybody Going?

In the case of IT workers, odds are good it's Dallas, Denver, Seattle, Washington, San Jose or Research Triangle Park. These areas have become the top relocation job markets for technologists. By Erik Sherman

We're improving life. And IT careers too. ⅄ Aventis

Analysts report that purchases of hardware and equipment are slowing in the telecommunications and wireless industry. However, those in the industry see a different picture – demand that is escalating exponentially every month. The result is that, despite the headlines, wireless and telecommunications continue to be a robust industry sector where new technologies and opportunities develop on a near-daily basis.

The companies in this IT Careers feature offer breathtaking challenges, career opportunities and the opportunity to create the 21st century's communication grid.

InterDigital Communications Corporation
King of Prussia, PA

3G. The third generation of wireless communications. Positioned for growth in 3G is InterDigital, a 20-year veteran of the wireless world, the company holds more than 1,000 patents/pending patents worldwide on the digital technologies needed for voice and data communications.

Susan Sutton, director of marketing communications says the company's technology is what "makes wireless happen. With 3G, we've been focused on increased capacity and higher data rates. This is the technology that will give your mobile device access to the Internet and the ability to send and receive e-mail," she says. The company's investors cover several 2G and 3G global air interface standards, including IS 54/136, GSM, PHS, PDC, DECT, TETRA and W-CDMA TDD and FDD. Currently, InterDigital is working with Nokia, the worlds' largest mobile phone supplier, to develop 3G technologies.

InterDigital's focus rests on technology development and wireless standards contributions. It accomplishes its worldwide mission through licensing, partnerships and by offering development services to its customers. "Working for InterDigital, you will make a difference in the development of a global wireless capability, which doesn't exist today," says Sutton. "And while you are located in the United States, you will be working with engineers from around the world, shaping tomorrow's wireless product offerings."

The company plans to hire 30 additional engineers by the first quarter 2001. Following a 60 percent growth in engineering since the beginning of this year. "We're hiring across all disciplines of engineering – from ASIC, software engineers to systems architecture engineers," says Sutton. In addition to the King of Prussia, PA headquarters, InterDigital has development facilities in Melville, NY and Montreal, Canada and a business development office in Japan.

"We offer a great work environment where we have the opportunity to contribute to the roll out of 3G," Sutton adds. "We encourage ongoing training, offer flexible work hours, and appreciate that people have personal lives – we want our employees to be successful in their professional and personal lives."

Marconi plc
Offices throughout North America

Marconi plc is based in London. The United States operation of Marconi has four businesses – Communications, Services, Systems and Capital.

Fiore London, vice president of talent management, explains that the communications business is providing broadband, optical and access equipment. Marconi Services plans, builds and operates networking systems and operation centers for its customers. And Marconi Systems is made up of Marconi Medical Systems, Marconi Data Systems (providing chips embedded in bar coding to help increase inventory levels, where a product is made and where it is consumed), and Marconi Commerce, which provides monitoring systems and devices at consumer points of purchase. The fourth business, Marconi Capital, is a venture capital arm that allows Marconi engineers with ideas to create their own spin-off businesses.

This array of businesses provides bleeding-edge challenges throughout the United States operation. "We plan to hire 3,000 people in the next year, just as we did in 2000," says London. "Yes there's a lot of shakeout in this market, but growth still is occurring. The market demand is fierce and the companies who weather this storm will have the opportunity to address a communications problem that seems like it is insatiable at this point."

London says openings are available at every level, from principal engineers to entry-level positions. "Our recruitment strategy is focused on hiring talent and training for skill," he adds. "We are looking for people with the mental acuity to learn and who have a team work and customer orientation. We can then provide any technical development that is needed."

Driving the hiring are major projects, such as Marconi's efforts in photonics and asynchronous transfer mode. "We're talking about third generation wireless and beyond," London says. "We do very well in product spaces today, but where we have the advantage is the next generation. Marconi is one and sometimes two to three generations ahead of what our competitors are doing. Through our diverse operations, we can plan, build and operate the systems of the future."

In addition to the technical challenge, which London says employees continuously state is a leading reason for choosing Marconi, the company is committed to "taking care of career aspirations and developmental needs," he says. "We strive to meet your needs to be stretched, while allowing you to work in an environment that lets you focus on getting your work done. We try to diminish the number of rules and bureaucracy that can get in the way of contributing and creating."

London calls it the Marconi Way. "We're serious about this," he states. "It's Real People, Passion & Pride, High Velocity, Special Delivery and Radical Thinking. Your ability to execute to that – whether you're a senior vice president or new – is important here."

Motorola
Tempe, AZ

Adding a couple of people every day to your workforce is a major challenge. At Motorola the challenge is multiplied as the company plans to hire thousands of people in 2001, including a large number in the technical and professional ranks. "It's part of the shift of this company," explains Bret Matthews, strategic candidate sourcing manager. "We're moving from a Motorola known as a hardware company to a company that provides software solution development."

The translation is that you may be using a Motorola handset to receive and send data, but you also will see Motorola at the peripheral edges – addressing data, audio and video solutions for the wireless-to-Internet environment.

Matthews says the company provides integrated communications and embedded electronic solutions that include software-enhanced wireless telephone, two-way radio, messaging and satellite communications products and systems, networking and Internet access products, embedded semiconductor solutions for networking, transportation, wireless communication and imaging, and entertainment, embedded electronic systems for automotive, communications, imaging, manufacturing systems, computer and industrial markets, and digital and analog systems and set-top terminals for broadband cable television.

"While this external requirement for technology is massive, so too is the internal development requirement," says Matthews. "A company of this size needs the systems and technology that will allow us to develop and test products and services quickly."

To meet both internal and external requirements, Motorola is "looking for the individual who is open to personal challenges and the opportunity to look through out the organization for ways they can individually contribute and as a member of a team," says Matthews. "We have career paths for technical leadership, management leadership and various tentacles that extend from those two paths. We work with you to develop a plan so you can guide your own career, developing bleeding-edge skills and core work skills." Motorola is a global company, so hiring is under way from Beijing to Latin America, North America to Europe.

Matthews believes that most all companies are touting the same things in terms of what they can offer employees. The LifeWorks Benefits program allows employees to individually select benefits that are needed at particular

I.T. Careers in Wireless & Telecommunications

points in your life. Stock purchase and investment plans are offered, as well.

"What sets us apart is that Motorola has 75-plus years of history in working with you and your family to make things possible," he adds. "We have a rich tradition of successes and a network of varied opportunities we can offer, from wireless or telecommunications to technology, RF or semi-conductors."

Verizon Communications
New York, NY

Verizon Communications is the nation's leading provider in wireline and wireless communications, the company born of the merger of Bell Atlantic and GTE. The merger, finalized in June, created a company that provides customers "the richest array of high-growth communications services."

That's the way that Kathy Costenbader, recruiting director, describes the company to people joining the Verizon team. The company provides wireline communications services, high-speed data services, wireless service through Verizon Wireless, and digital networks that include more "first mile" assets than any other communications company. "In terms of information technology, the corporation offers several areas of technical concentration," Costenbader explains. "Our IT Group is undertaking projects to enhance and integrate Verizon's legacy core business systems with Internet technologies for customer access, as well as for internal use, and continues to develop leading-edge DSL applications – such as recent enhancements to our customer care applications. The group also recently completed the Automated Assignment Inventory System that integrates four different platforms in a highly configurable, scalable network. It's a system that supports Verizon, but one that we also will be commercializing for use by other global telecommunications companies."

Another group in Verizon e-Business Costenbader says, the group was formed just this year as a start-up organization challenged to harness the power of the Internet to enable Verizon to offer new products and services to external customers, web-enable existing systems and connect employees to each other through web technologies. Projects include business intelligence-creating applications for executives that provide real-time data on company performance and statistics, intensive data mining and targeted marketing over the web. Centranet and ISDN provisioning through the Web, and consumer and small business broadband portals.

The Verizon Labs group is tasked with developing key projects and products for the future. "These are highly experienced people who have a strong understanding of software and engineering development, who are creative and tenacious," says Costenbader. "We look to them to infuse us with new ideas."

Along another technology line, the TSI Division provides proven solutions for roaming facilitation, fraud management, network services and more. TSI provides a single source for designing telecommunications solutions that meet "virtually all our changing needs." Costenbader adds. "We forged successful alliances with more than 180 wireless operators in North America, Latin America, Europe and Asia/Pacific."

in the IT, TSI and e-Business groups. Verizon Communications is looking for people with experience in object-oriented methodologies, full life-cycle development and technical skills such as HTML, D-HTML, Visual Basic, XML, Corba, Java, Java Script, Voigent, Verity, Smalltalk and Vitria. "We need people who have a strong initiative, solid fundamental skills so that they can adopt and develop across the opportunities we can offer," Costenbader explains. "We also look for people with business savvy, communication skills, the ability to learn quickly and who like to learn from others and share their own knowledge with others."

Verizon Wireless
Bedminster, NJ

The nation's largest wireless service provider is Verizon Wireless, created from the former Bell Atlantic Mobile, Air Touch Cellular, GTE Wireless, Primeco Personal Communications and AirTouch Paging Companies* With more than 26.5 million customers, the company has a nationwide wireless infrastructure, enabled by an information technology organization headquartered in Warren Township, NJ.

"We worked in many exciting projects in 2000," says Laura Wildemann, associate director of staffing, "such as the conversion of financial, human resources and payroll systems to PeopleSoft and web-enabling our mission critical applications. This subsequently created more career opportunities for IT professionals."

Andy Wrubel, senior technical recruiter says the company has a consistent need for IT professionals across the country in both regional and headquarters operations. "We continually look for PeopleSoft developers, Sun UNIX administrators, individuals with Java and C++ skills to meet on-going and new challenges," he says.

Wrubel says when looking at resumes, Verizon Wireless takes note of professional growth and career progress. "At the entry level, we're looking for people who have technical education and also those who have the knowledge and desire to learn. Also, we look for strong communication skills, interpersonal skills, leadership skills and the aptitude to acquire technical knowledge quickly."

Wildemann and Wrubel believe the company actively offers great opportunities for IT professionals. "Verizon Wireless is definitively an exciting place to work," says Wildemann. "We are the largest wireless company in the United States, and we are in one of the most dynamic and fastest growing industries in the country. That means there are tremendous opportunities for career growth."

Wildemann says the company also places major importance on ongoing learning and professional growth, offering technical and managerial career paths, tuition assistance and in-house training. "Employees can expand their knowledge by moving from one technology area to another," she says. "This is a very fast-moving and challenging environment. It's a professional environment where you'll find people who have a lot of fun supporting the #1 wireless company in the country"

*Does not include all PrimeCo and GTE Wireless properties

VoiceStream
Seattle, WA

In less than five years, VoiceStream Wireless has become the fastest growing wireless provider in the country through a series of agreements and acquisitions. VoiceStream and its affiliates now own licenses to provide service to over 260 million people or approximately 95% of the United States and is continuously building out new markets. In 2000 alone, the VoiceStream brand name was introduced in 16 new markets across the country with the help of actress and spokesperson Jamie Lee Curtis. Using the Global System for Mobile Communications (GSM) technology – the world's most widely used digital standard – the next few years promise to be just as dynamic as VoiceStream positions itself at the market leader in wireless data in 2001 and beyond.

This phenomenal growth represents a tremendous opportunity for talented people to join the VoiceStream team. In every area of the company VoiceStream is focused on building a high quality operational platform capable of supporting such growth rates over the next several years. The linchpin behind this effort is VoiceStream's IT department, responsible for developing the key infrastructures necessary to be a powerhouse national company.

"It's a fun, fast-paced environment where decisions are made and run with," says Patrick Sansing, executive director of systems and operations. "We function in small teams that really have the power to make things happen. We are not merely an IT shop," he adds. "We get involved in every area of the business, looking at how new technologies can support the overall business goals."

VoiceStream is actively recruiting people who are motivated by having a direct impact on the business through the work that they do. "We are looking for people who have a couple of years experience in the technical arena, and want to see examples of where innovation has been used responsibly, taken part projects seen through to completion." Open positions include system administrators, network technicians, call center technology technicians, architecture design, project management and business analysis. Jobs are available in Seattle, Tampa and in other major markets across the country.

"What sets us apart is the environment we create for people. VoiceStream has built its brand around its Get More From Life philosophy and this extends to its employees. Freedom and flexibility are very important here," says Sansing. "People are able to choose technologies and solutions that interest them, and then determine how to implement, support and grow those technologies to directly impact the business."

IT careers

For more job opportunities with Wireless & Telecommunications firms, turn to the pages of Flowers.
• If you'd like to take part in an upcoming Flowers feature, contact Josh Crowley, 650.312.5607 or josh_crowley@flowers.net.
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DEPARTMENT EDITORS

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COMPANIES IN THIS ISSUE

E-Security

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However, NIPC has repeatedly come under fire for its perceived unwillingness to share information on investigations and its failure to broadcast timely warnings during the "I Love You" virus outbreak in May.

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"Despite taking an incredible amount of flack, I think it's becoming increasingly effective in its role," said Robert Miller, deputy director of the Critical Infrastructure Assurance Office at the U.S. Department of Commerce. "If you don't have them, you would have to reinvent them."

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U.S. Navy Capt. Robert West, deputy commander of the Pentagon's Joint Task Force for Computer Network Defense, said that, by definition, all attacks are criminal first and acts of war second. "For us, it really does become cumbersome," West said.

Aside from the privacy issues, creating a national security trip wire is difficult, said Richard Hunter, an analyst at Stamford, Conn.-based Gartner Group Inc. and a former National Security Agency analyst.

"It's entirely possible for attacks to go undetected for weeks and months," said Hunter. "Intent typically is something that you judge from what has been done. Even after an intrusion has been detected, it can take some time to determine what has been done."

Serious Limitations

However, Ken Watson, co-chairman of the coordinating committee of the National Partnership for Critical Infrastructure Security (NPCIS), acknowledged that the entire effort needs a "more coordinated" approach.

The problem has been that the government has little or no ownership of the infrastructure, limited jurisdiction and limited intelligence capabilities, said Watson, who's also manager of critical infrastructure protection at Cisco Systems Inc. in San Jose.

Although the critical-infrastructure protection effort will continue to move forward, "it will probably look different," said Watson.

"I would not be surprised if the organizational structure changed," said Tim Atkin, a member of an NPCIS working group and director of critical infrastructure protection at consulting firm SRA International Inc. in Fairfax, Va. "I hope that [the] new administration understands the concerns of industry that this issue [should] not be turned into

solely a law enforcement issue or a defense issue. What has been important this past year is the understanding that industry is part of the solution and that national security equals economic security." 🔲

Sun Problems

ing the problem with a "mirrored-cache" technology that was due in October.

Sun also said it had "cache-scrubber" patches and various environmental recommendations that should have alleviated the situation for users.

"The kernel scrubber software is shipping, the best practices are in place, and we've begun shipping mirrored [memory] when they are needed to achieve satisfactory uptime," a Sun spokesman said in an e-mail to Computerworld.

However, some users quoted in Computerworld's Aug. 28 story said last week that their situation hadn't changed at all, despite having tried some of Sun's suggestions.

In fact, a major utility in the western U.S. is asking Sun to take back three of its midrange servers, collectively valued at more than $500,000, because of Sun's continuing inability to resolve the problem.

"The decision was made following the long history of problems, pseudo-fixes and evasions by the Sun representatives," said a user at the utility who requested anonymity.

The utility company will continue to use Sun servers for Web-based applications, but it has moved the database application that was running on the

Sun servers to a Compaq Computer Corp. Unix server.

Norman Morrison, an independent project consultant working at a service provider that hosts Web sites for companies that sell sporting goods, said he's another unhappy customer. "To date, we have gotten no satisfaction on this problem," despite continuing server crashes and attempts to fix them, he said.

Less than a month ago, the service provider bought several new Sun servers, one of which has already begun creating because of memory-related issues, Morrison's said. Because the service provider uses Sun servers for all its production and development applications, Sun is pretty much locked in as its vendor, he added.

Get on the List

Based on Sun's information, at this point, "the mirrored cache appears to be the only way they have corrected the problem with 100% certainty," Morrison said. But he added that Sun told him that that technology won't be available until the end of next month and that companies must get on a list in order to get the fix.

"What they are probably trying to do is to prioritize who gets it first," said Bill Moran, an analyst at D.H. Brown Associates Inc. in Port Chester, N.Y. "It sounds to me [as if] Sun does have a fix."

But beyond mirrored cache,

Morrison said other options Sun has offered — such as swapping existing processors for those containing a different vendor's cache memory and operating system kernel patches — don't seem to work as well.

"Sun supplied an external cache-refresh kernel patch to reduce the likelihood of this recurring, but this adds [load] to our boxes — and our systems are still crushing regularly," echoed a user at a large European bank who also requested anonymity.

Similarly, "Sun has recommended various cooling and environmental requirements, all of which we meet," the user said. But there have been more than 50 memory-related server crashes in the bank's London offices during the past few months alone, he added.

After a high-level meeting with bank representatives last week, Sun requested further environmental surveys, the user said. "They are giving strict airflow and temperature requirements that exceed those quoted in their product guides," the manager added.

Not everyone has expressed dissatisfaction, however. One user at an online travel services firm claimed that his problems were resolved with an operating system upgrade to Solaris 2.6. "The recent upgrade has eliminated all issues we had with the servers frequently coming down — whether under load or not," he said. 🔲

ABP

E-Security

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FRANK HAYES/FRANKLY SPEAKING

'Tis the Season

FOR ONCE, Santa was feeling pretty jolly a week before the big night. Cornering the market on PlayStation 2s meant he could fill all the children's requests, and he still had a few extra to auction on eBay for $1,000 a pop. "Paid off the sleigh repairs and hired some extra help, too," he chuckled. "All that's left is finishing up the gift list for the IT industry."

"So get to it, fat boy," said the tall, surly, green-faced temp at the keyboard. "Bill Gates is next on the list. Poor sap lost his CEO job this year — now he's just the world's richest programmer."

"How about a flow-chart template?" said Santa. "He's already got the bad haircut and pocket protector. Next?"

The temp rattled the keys. "Shawn Fanning. Who's he?"

"Oh, another college-dropout programmer — he started Napster," said Santa. "And got sued, and sued, and sued. How about an honorary law degree?"

"Right," smirked the temp.

"Next is Lou Gerstner, IBM honcho, right?"

"He's spending $1 billion on Linux, a free operating system," said Santa. "I know, give him a hardcover copy of Eric Raymond's open-source book, *The Cathedral and the Bazaar.*"

"But he can read that for free on the Web — oh, I get it," said the temp, scrolling down the screen. "Steve Jobs."

"Hmm — make it a DVD of that movie, *The Shadow,*" said Santa. "Apple lost half its value in a single day back in September when investors got spooked. If Steve doesn't get back his power to cloud men's minds soon, he'll have to pay people to take Apple stock."

"Larry Ellison," the temp said. "Isn't he dead? Rumors said he plowed his jet plane into the Oracle parking lot."

"Wishful thinking," said Santa. "All the other geeks are jealous of playboy Larry. Let's give him a trash compactor — he can use it if he ever wants to dig through Microsoft's garbage again. And shouldn't we have something for Judge Thomas Penfield Jackson?"

"Yeah, we took care of him back in the lawyers-and-judges category," said the temp. "He gets a chain saw."

"Oh, right," said Santa. He stepped aside as an elf whizzed by on a Razor scooter, balancing a stack of packages in one arm. "And did we have something for all the FBI agents?"

"Secret decoder rings. They'll need 'em, once everybody gets paranoid about Carnivore and encrypts their e-mail," said the temp. "Next is Jeanne Jackson at Wal-Mart.com."

"She shut down the site for a month to retool it. Gutsy move," said Santa. "What about some kind of knickknack?"

The temp snickered, "A big marble brass monkey with giant b—"

Santa clamped a hand firmly across the temp's mouth. "Just type," he instructed, looking at the screen. "For Amazon.com's Jeff Bezos, a patent on single-click privacy violation. And for Jo Lernout and Pol Hauspie, a gift certificate for a table at a Belgian flea market. Or do you think they'd be better off with *Accounting for Dummies*?"

"Mmph hmmmph mmph," said the temp.

"Fair enough," said Santa, taking his hand away. "For the anti-spam vigilantes at MAPS, a bunch of Lone Ranger costumes. And for the 'I Love You' virus writers —"

"A social disease," said the temp. "Hey, just joking! But I've got the perfect gift for those hardworking techies who never abandoned the IT trenches — one with all the excitement, thrills and heartbreak they never got by jumping to a start-up."

"A happy, rewarding career?" suggested Santa. "Or a dot-com of their own?"

"Naaah," said the temp. "A PlayStation 2. We got a million of 'em."

I've got the perfect gift for those hardworking techies.

SHARK TANK

JUST IN TIME for the holidays, big appliance maker bans all company-paid lunches and refreshments at meetings in a cost-cutting measure, says insider pilot fish. But *somebody's* still getting chow. A week later, management sends a broadcast e-mail "Do you use the old system to place your catering requests? If so, there is one more opportunity to attend the last info session on the new Web-based catering system. Refreshments will be served."

HOLIDAY DISRUPTION Internet consulting company's administrative assistant sends the memo to all consultants, asking for names to add to the company's holiday card list, reports a pilot fish: "The holiday season will soon be upon us. If you know someone you would like to send a holiday card, please e-mail me their information and a very short disruption of who the person is."

IT CONTRACTOR pilot fish runs up pre-holiday overtime. As a gesture of goodwill, the suggests to client boss that he call the hours the following short week to smooth things out. Boss gladly OKs the deal, and that's how the fish does it. But an over-vigilant office manager at the client company bounces the fish distinctly remembering the fish was *not* in on the day in ques-

tion, the office manager suspects fraud. Never mind, says the fish. The client boss approves the overtime charges and "explains the problem to my agency, which happily bills extra for the overtime."

GIVE THANKS AND SHOP Midwestern catalog sales company exec, eager to make new bulk e-mail software pay off, orders up an e-mail for all customers "to let them know we'll remain open on Thanksgiving Day to take their phone orders." Response was high, says insider pilot fish, largely from "people castigating us for choosing to stay open and denying our employees a day off to count their blessings." But who says these boxes never learn? The company will shut down for Christmas Eve and reopen Dec. 26, the fish says. "They decided to let the Web sites do the job. Besides, if you haven't received your Christmas decorations and gifts by then...... "

Stuff my stocking: *sharky@ computerworld.com.* If I use your true tale of IT, you get a snazzy Shark shirt — perfect for making the boss nervous at holiday parties. Like Computerworld: Sharky won't be here next week; the next issue is Jan. 1. But you can still catch the daily feed during the holidays at computerworld.com/sharky.

The 5th Wave

EXPERIMENTING WITH THE WIRELESS LASER BEAM NETWORK
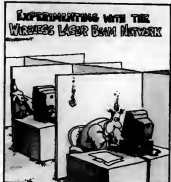
"Okay—did you get that?"

And you think the stock market is tough on technology companies

Chris Shipley and Jim Forbes are even tougher. And it makes for a great conference.

Lotus

Let me on

This is no way to treat an Internet customer. A lot of people are spending a lot of time online

these days. That can put a strain on your systems. And your customers' nerves. Call Sprint. We promise 99% busy-free dial-up and

99.99% backbone availability for your customers. Then back our promise with some of the most aggressive Service Level Agreements

(SLAs) in the industry. Furthermore, Sprint connects your customers to an all-digital Internet backbone. The only one with self-healing

SONET technology. The Sprint network is so fast and reliable, we guarantee that roundtrip backbone delays

| Sign up for a term |
| agreement of one year |
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will not exceed 70 milliseconds. This is exactly the kind of service and speed that Internet customers

want and expect. So call 1 877 294-7669 and speak with one of our data specialists. They can help you configure a robust, scalable

Internet access solution right on the phone. Call today. Your customers are waiting.

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